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ARISTOTLE

DE ANIMA

WITH TRANSLATION, INTRODUCTION AND NOTES

BY

R. D. HICKS, M.A.

FELLOW AND LATE LECTURER OF TRINITY COLLEGE, CAMBRIDGE

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TO HENRY JACKSON

WHO HAS INSPIRED MANY

WITH HIS OWN LOVE OF

GREEK PHILOSOPHY

ADDENDA ET CORRIGENDA.

Page 15, critical notes, line 2, *after* reliqui codd. *add* Bek. Trend.

„ 48, critical notes, line 4, *for* appendicem *read* Fragmenta I., ll. 1—3, p. 164 *infra*.

„ 56, critical notes, line 12, *after* Bek. Trend. Torst. *add* Rodier.

„ 56, critical notes, line 13, *after* Simpl. Soph. ‖ *add* *ζώντων* P ‖.

„ 57, translation, line 7, *for* body *read* rest.

„ 64, critical notes, line 9, *for* append. *read* Fragmenta II., l. 61, p. 166 *infra*.

„ 114, critical notes, line 6, *for* *τότε*...31. *γίνεται* *read* *τότε*...31. *καὶ ὁ*.

„ 116, critical notes, last line, *for* 162 *read* 160.

„ 145, critical notes, line 12, *for* Hayduck *read* Heinze.

„ 150, critical notes, line 7, *for* 540 *read* 140.

„ 150, critical notes, line 13, *after* ap. crit. ad loc.) *add* Bek. Trend.

„ 152, critical notes, last line, *after* Bek. Trend. *add* Biehl.

„ 204, end of note on 403 b 8, *add* A similar confusion of *οἱ λόγοι* with *οἱ λέγοντες τοὺς λόγους* may be noticed 407 b 13—17.

„ 251, end of first note on 406 b 13, *add* The meaning of *ἔκστασις ἐκ τῆς οὐσίας*, so far as *ἀλλοίωσις* is concerned, is given less bluntly and paradoxically 414 a 11 sq., 426 a 4 sq., where *ἡ τοῦ ποιητικοῦ καὶ κινητικοῦ ἐνέργεια* is said to reside not *ἐν τῷ ποιητικῷ*, but *ἐν τῷ πάσχοντι*.

„ 251, line 2 of note on b 17 *for* Koch *read* Kock.

„ 356, end of note on 417 b 5, *add* Cf. 429 b 5—9, 430 a 14 *ὁ τῷ πάντα γενέσθαι*. The limitation, temporal or modal, which I find in *θεωροῦν*, is often expressed by a dependent clause when the transition from *ἕξις* to *ἐνέργεια* is described, as here, in precise terms, e.g. *ὅταν φρονῇ* 417 b 8, *ὅταν νοῇ* 431 b 16, *ὅταν θεωρῇ* 432 a 8, b 29, and generally *ὅταν ἐνεργῇ* 425 b 29: cf. *τὸ ἤδη ἐνεργοῦν* 417 a 12, *ὁ ἤδη θεωρῶν* 417 a 28.

„ 377, line 11 of note on 419 b 24, *for* XIII. *read* No. XXX. (Vol. XIII.).

„ 385, line 4 of first note on 420 a 31, *add* Cf. *Metaph.* 1052 b 25—31.

„ 400, end of first note on 422 a 22 *add* Another Miltonic echo comes from *Il Penseroso* 13—16 "Whose saintly visage is too bright | To hit the sense of human sight, | And therefore to our weaker view | O'erlaid with black."

„ 449, end of note on 427 a 2 *add* Perhaps a 3 *ἔστι δή*...a 4 *ᾗ ἀδιαίρετον* should rather be paraphrased thus: "There is, then, a sense in which the percipient of two distinct objects is divisible; there is another sense in which it perceives them as being itself indivisible." If so, with *ᾗ ἀδιαίρετον* we should supply *τὸ αἰσθανόμενον* or *τὸ αἰσθητικόν*, and not *τὸ διαιρετόν*, as is done on p. 119.

„ 524, end of note on 430 b 26, *add* In an instructive note Torstrik (pp. 196—198) calls attention to the distinction between *ὥσπερ* and *οἷον*. The latter, he says, is used in citing examples or in passing from the genus to its subordinate species; the former extends a predicate from one subject to another in sentences like the following: "The Greeks are sharp-witted, as also (*ὥσπερ καὶ*) some of the barbarians." If this be so, *ὥσπερ* is quite in place in comparing the meaning of two terms. The term *φάσις* denotes something predicated of something, as does the term *κατάφασις*. But the writer passes from the term *φάσις* to the thing denoted by the term when he adds in the next words that this predication is always true or false.

„ 532, line 15, *after* better instance is *insert* *ὁ δὲ νοῦς...οὐσία τις οὖσα* 408 b 18 sq. Cf.

PREFACE.

THE first English edition of this treatise appeared in 1882 under the title of "Aristotle's Psychology in Greek and English, with Introduction and Notes by Edwin Wallace." It has been for some time out of print and, if Mr Wallace had survived to see his work through a second edition, he would probably have made considerable alterations, owing to the researches of the last quarter of a century. Of these I resolved to make full use, when, with their accustomed liberality, the Syndics of the Cambridge University Press accepted my offer to prepare an independent edition. Among the fresh materials which have accumulated, two are of special importance: I mean, the critical edition of *De Anima* by the late Wilhelm Biehl and the series of Aristotelian commentaries re-edited under the auspices of the Berlin Academy. As regards the text, I have seldom had reason to deviate from Biehl's conclusions, but in my critical notes, which are based on his judicious selection, I have gone further than he did in referring to, or occasionally citing from, authorities. The interval of time has enabled me to cite with greater uniformity than Biehl could do from the Berlin editions of the Greek commentators. I have followed the example of Wallace in printing an English version opposite the Greek text. A century ago, perhaps, the Latin of Argyropylus with the necessary alterations would have served the same purpose by indicating the construction of the sentences and the minimum of supplement needed to make sense and grammar of Aristotle's shorthand style. But fashions have changed. The terse simplicity, not to say baldness, of literal Latin is now discarded for that rendering into a modern vernacular which, whatever its advantages, is always in danger of becoming, and too often is, a mere medley of specious paraphrase and allusive subterfuge. In compiling my notes I have drawn freely upon all my predecessors, not only on the Greeks themselves, who even in their decline were excellent paraphrasts, but also on modern editors and translators, from Pacius and Trendelenburg onward; while through Zabarella I have made some slight acquaintance with the views of the Latin

character. Among modern critics few have the great gifts of Torstrik, who by his insight, candour and logic contributed beyond all others to improve Bekker's text of the treatise. Of this distinction nothing can rob him: haeret nomini cum multa laude [illegible]. In matters of punctuation and orthography I have taken my own line, but, lest I should be accused of inconsistency, I must add that when citing from other editions I have been scrupulous in preserving their peculiarities. Thus, while for my own part I admit indifferently *αἰεί* and *ἀεί*, *γίγνεσθαι* and *γίνεσθαι*, when I cite the *Metaphysics* from Christ, I follow him in always preferring *αἰεί* and *γίγνεσθαι*, to the exclusion of *ἀεί* and *γίνεσθαι*. Again, though I regard *ζῷον* and *μέμικται* as alone correct in citing from other editions where *ζῶον* and *μεμικται* are printed I have been careful not to alter the spelling. In references to the *Metaphysics*, *Ethics* and *Politics* I have been content to give Bekker's page, column and line without the addition of book and chapter, thus avoiding the confusion which arises from the double numbering of certain books and chapters. I have tried as far as possible to give in the notes the reasons for my conclusions, so that where I have erred it will be more easy for my critics to refute me. My own claims to originality are modest enough. In fact, in a subject like this, absolute novelty of view is almost unattainable, perhaps undesirable.

I am indebted to Professor Henry Jackson, to whom the work is dedicated, for permission to publish sundry proposals, chiefly textual, taken from his public lectures delivered in the year 1903. Mr F. M. Cornford kindly placed at my disposal for this edition certain notes on the third Book, which, after I had made use of them, were communicated to the Cambridge Philological Society. My book has profited by the vigilance and insight of several friends, to whom I desire to make fitting acknowledgment. In particular Miss Margaret Alford, Lecturer of Bedford College, revised for me the first draft of the notes and added to them much of value. Nor must I pass over the good offices of Dr T. L. Heath, who assisted in correcting the proof sheets, or those of the Rev. [illegible] who aided me five years ago at the commencement of my task. Lastly I must express very great obligations to the staff of the University Press and to their accomplished readers, [illegible] co-operation.

R. D. H.

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SUMMARY OF CONTENTS.

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INTRODUCTION. I.

THE SUBJECT.

THIS treatise, however inadequate its method and assumptions, when judged by the standard of the present day, has nevertheless a recognised place in the early history of psychology, for it is the outcome of a long series of conjectures, enquiries and provisional hypotheses, which occupied men's minds in the infancy of science. Aristotle himself, though he may be claimed as in some sort the founder of a science of psychology, comes at the end of a period of development and, to understand him aright, we must not only take account of the thinkers who preceded him, but also seek the humble origins of their speculations in the crude conceptions of a distant past. Anthropology has made us familiar with the fundamental conception of the soul as a duplicate of the man or thing to whom it belongs. So far as it is possible to retrace the steps by which this conclusion is reached, it would seem that savages assimilate inanimate to animate objects. In natural phenomena the savage sees the agency of personal beings, whom he believes to be swayed by the same motives and impulses as himself. This applies also to all vital and mental phenomena. Activity in animals and other men is explained by the presence within them, sleep and death by the absence from them, of something which the observer conceives as, like himself, a concrete material thing, a miniature of the body, seen in dreams, in shadows, in reflections, liable to come and go from the body in which it resides, and finally severed from it at death. That it survived the death of the body was a widespread belief, attested by the cults of many races, by the practice of burying with the dead articles for use and comfort to which they had been accustomed in their lives, and by the kindred practice of human and animal sacrifices at the funeral rites of chiefs[1]. It is quite certain that the Greeks were no exception to the universality of these beliefs[2]. In the legends of Meleager and Nisus the

Primitive and popular beliefs.

[1] Frazer, *Golden Bough*, vol. I., cc. ii., iii.

[2] See the evidence in Rohde, *Psyche*, I. pp. 1—68: cf. p. 200 sqq.

external soul, on which the life of the individual depends, plays the same part as in the folk-lore of savages to-day[1]. The opening lines of the *Iliad* draw a sharp distinction between the heroes themselves, left a prey for dogs and vultures, and their souls, sent down to Hades or the invisible world. The ghost of Patroclus, which appears to Achilles in a dream, is an emaciated, enfeebled shadow, deprived of all its strength by severance from the body, which was the real man. In the underworld these pale, ineffectual ghosts are much alike in general condition. Apart from a few notorious offenders punished for their misdeeds, they pursue the shadows of their former avocations. Whether in Greek language and thought two separate conceptions are blended, whether the sum of the intellectual and moral qualities was associated at one time with the blood and at another with the breath, whether the breath of life superseded an older smoke-soul, the exhalation arising from spilt blood, and whether these two conceptions were connected with the practices of inhumation and cremation respectively, are matters of speculation on which it is hardly possible to arrive at a definite conclusion[2]. When we pass from Homer to later poets we find the same primitive beliefs variously modified. In Hesiod the heroes go no longer to the underworld, but to the Isles of the Blest, and ancestral spirits have developed into "daemons" exerting a beneficent influence on their descendants[3]. From the dirges of Pindar we have two important fragments[4]. One is a glowing picture of the lot of the happy dead. In the other we are told that, "while the body of every man followeth after mighty death, there still liveth a likeness of his prime which alone is of divine origin, which slumbereth so long as the limbs are busy, but full oft in dreams showeth to sleepers the issue that draweth near of pleasant things and cruel."

Orphic doctrine.

In the Orphic and Pythagorean brotherhoods the primitive beliefs were moulded into a thoroughgoing doctrine of transmigration. Three main conceptions underlie Orphic asceticism. First, there is the opposition between body and soul. The soul is better than the body and is buried in the body for its sins, the body is its temporary prison. Next comes the necessity for a purification of the soul. All evil is followed by

[1] Frazer, *loc. cit.*, vol. II., c. iv.

[2] Etymologically θυμὸς is connected with *fumus*: cf. Gomperz, *Greek Thinkers*, I. pp. 249 sq.

[3] Hesiod, *Works and Days*, 121 sqq.

[4] Fragg. 95, 96.

retribution. Through abstinence and penance alone may the soul hope to regain its former blissful state. Thirdly, there is the long series of incarnations in which, according to their deeds during a former existence, souls take a higher or a lower place in human or animal bodies or even in plants[1]. Though these ideas occupy so small a place in literature, they are clearly very old, for the extant burlesque of Xenophanes[2] attests the acceptance of metempsychosis by Pythagoras, and all probability points to his having derived it from the still older Orphic sect. At Athens the Eleusinian mysteries, at which some such ideas were symbolically inculcated, were under the patronage of the state; but nevertheless the belief in an after life in the underworld, as set forth by Homer, for the most part maintained its hold upon the ordinary educated citizen.

Ionian physicists.

Little is to be learned from the Ionian thinkers, whom Aristotle calls physicists or physiologists[3]. In the dawn of enquiries which, strictly speaking, were rather scientific than philosophical, men sought to explain to themselves of what things were constituted and how they had come into their present condition. Their problem, we should now say, was the constitution of matter and, if occasionally, when they found the primary element in air or fire or some other body, they also declared that this was the cause of vital functions, it was merely a corollary to their general doctrine and of no special importance. The subjects on which we find hints are the substance of the soul, the distinction between its various powers, and the nature of knowledge. So far as the substance of the individual soul was identical with, or a product of, the universal element, they all agreed in regarding it as not immaterial, but of an extremely refined and mobile materiality. The soul was credited with the power to know and perceive, as well as the power to move the body.

Heraclitus.

Heraclitus, who had grasped the flux of matter in constant circulation, held it to be governed by an universal law. Knowledge to him consists in apprehending this law. In comparison with such knowledge he deprecated the evidence of sense: eyes and ears are better than the other senses, but are bad witnesses, if the soul does not understand. Meanwhile in the West other schools of philosophy had arisen, the Eleatic and

[1] Cf. Rohde, *Psyche*, II. pp. 103 sqq.

[2] Frag. 7 D.

[3] The philosophical speculations on the soul from Thales to Democritus and Anaxagoras are reviewed by Rohde, II. pp. 137—198. Cf. also Beare, *Greek Theories of Elementary Cognition*.

Pythagorean. Xenophanes distinguished between truth and opinion.

Parmenides.

Parmenides derived the intelligence of man from the composition and elementary mixture of his bodily parts, heat and cold being the elements of things[1]. The preponderant element characterises the thought of the individual man. But the chief legacy of Parmenides to his successors was his doctrine of the one immutable Being, which alone satisfies the requirements of an object of knowledge. The element of the Ionians did not satisfy these conditions, being endowed with the power to pass from one condition to another, whether intermittently or perpetually. Nothing, according to Parmenides, is ever generated or destroyed, however varied its manifestations and the changes it presents to the senses. On the foundation thus laid by Parmenides Empedocles, Anaxagoras and Leucippus constructed their systems, resolving apparent generation and destruction into combination and separation of primary elements or principles, themselves indestructible. They differed, Aristotle remarks, as to the number and nature of these indestructible elements[2]. Empedocles made a mistake in accepting a crude popular analysis into air, earth, fire and water, elements which do not so much as correspond to a rough division of matter into the solid, liquid and gaseous states. Anaxagoras, with his homoeomeries, was in our view still wider of the mark. Leucippus and Democritus at last found in the atoms a working hypothesis of the constitution of matter, which has lasted down to the present day. It is these three physical systems which most profoundly influenced Aristotle. He unfortunately accepted the first with modifications and opposed the last, by the merits of which he was nevertheless profoundly impressed. Each of these three systems took up the problem of the soul. But in the meantime medical enquiries had been actively prosecuted, and it is to a Pythagorean, Alcmaeon of Croton, that we owe the earliest advances towards the physiology of the senses. He was the first to recognise the brain as the central organ of intellectual activity. He dissected animals and by this means discovered the chief nerves of sense, which, like Aristotle, he called "conduits" or "channels," and he traced them to their termination in the brain. Deafness and blindness he held to be caused when by a concussion the brain was shifted out of its normal position and the channels of hearing and seeing respectively were thus blocked. He submitted the several senses to a searching examination, starting

Alcmaeon.

[1] Frag. 16 D.
[2] *De Anima* 404 b 30 sqq.

with the anatomical construction of the sense-organ. The air in the ear he regarded as a sounding-board, and he attributed to the moisture, softness, flexibility and warmth of the tongue its capacity to reduce solid bodies to fluid as a necessary preliminary to tasting. He noticed the phenomenon which we call seeing sparks when the eye has received a heavy blow, and this suggested a crude theory of vision, postulating fire in the eye, a mistake repeated by Empedocles and by Plato. But it is with the glittering or transparent element of water in the eye that it sees, and it sees better according to the purity of the element. Vision is effected by the image of the thing seen and by the rays which issue from the eye within and pass outwards through the water. He derived memory from sense-perception and opinion from memory; from memory and opinion combined he derived reason, which distinguishes men from the lower animals[1]. What scanty information we have about him comes chiefly from Theophrastus[2], but it would be a great mistake to acquiesce in Aristotle's neglect of him. He is only once mentioned in *De Anima*[3], as having held that soul is immortal, on the singular ground that by its incessant motion it resembles the heavenly bodies, which he also held to be immortal.

Empedocles.

In Empedocles we are dealing not with a sober physical enquirer, but with a religious enthusiast and poet-philosopher. He accepted the transmigration of souls in a slightly altered form; he introduced wicked as well as good "daemons," condemned for their sins to wander for 10,000 years and to become souls of plants, beasts and men. In the course of their purification they become prophets, poets, physicians, princes, and again return to the gods[4]. Sensation in general he explained by the action of like upon like. Particles emanate from external bodies and enter our bodies by channels or pores. They cannot enter unless there is a certain proportion[5] between the emanation and the size and shape of the channel which is to receive it. Thus a sense-organ is a particular part of the body which, possessing channels of a certain size and shape, is adapted to receive emanations of a certain kind, of flavour, odour or sound. But his theory of vision was more complicated. Not only are there

[1] Plato, *Phaedo* 96 B, where, however, the name of Alcmaeon is not mentioned.

[2] *De Sensibus*, §§ 25, 26 (*Doxogr. Gr.* 506, 25 sqq.): cf. Philippson ὕλη ἀνθρωπίνη, pp. 20 sq. and Julius Sander, *Alkmaeon von Kroton*.

[3] 405 a 29 sqq.

[4] Cf. Plato, *Phaedr.* 248 D, E.

[5] *συμμετρία*, *De Gen. et Corr.* I. 8, 324 b 25 sqq.; cf. Theophr. *De Sensibus* § 7. Perhaps Empedocles was seeking to express the same fact as was Aristotle when he afterwards applied the word *μεσότης* to sense.

emanations from visible objects, but there are also emanations from the eye. To this he was led by the analogy of the dark lantern, of which the camera obscura furnishes a modern illustration. The transparent plates of horn or linen in the lantern, made to protect the flame from the wind which might otherwise extinguish it, correspond to the thin coats or films in the eye covering the pupil, whose contents are partly of a fiery, partly of a watery, nature. From the pupil fiery and watery emanations leap forth through funnel-shaped channels to meet the fiery and watery emanations coming, the one from light, the other from dark, objects outside. The principle of "like by like" accounts for the mutual attraction of similar materials and their meeting, and, when the two sets of emanations meet, vision takes place. The preponderance of water or fire in the eye accounts for the fact that some animals see better in the dark, others in the daylight[1]. Thus, then, we perceive like by like, the four elements of all things, air, earth, fire and water, outside, because air, earth, fire and water are present in our bodies[2]. Blood is the most perfect mixture of these four elements and to this blood where it is purest, viz. about the heart, he attributed thought. As we see earth by earth which is in us, water by water, so we think by means of blood, the bodily tissue in which all four elements are most perfectly blended. Empedocles, then, consistently confined his attention to the bodily process. The mental or psychical state is either ignored in his explanation or reduced to its physical conditions. Yet on the problem of knowledge, aware of the imperfection of the senses, he counsels us to withdraw our trust from them and prefer the guidance of reason.

Anaxagoras.

Anaxagoras distinguished sensation from intelligence and, whereas most of the Pre-Socratics agreed that we perceive things by having within us something like them, he held that we perceive in virtue of the presence within us of something opposite to the thing perceived[3]. Knowledge is not to be gained from the senses, because their powers cannot discriminate minute changes; while the reactionary physics which he propounded involved the presence in every sensible object of infinitesimal particles perceptible only in the aggregate and, blended with these, alien particles altogether imperceptible, because infinitesimal. Over against this infinity of homoeomeries he set

[1] Aristotle, *De Gen. et Corr.* I. 8, 324 b 25 sqq., *De Sensu* 2, 437 b 23—438 a 5, Theophrastus, *De Sensibus*, §§ 7—24.

[2] *De A.* 404 b 11—15, 409 b 23 sqq., 427 a 21 sqq.

[3] 405 b 14—21, Theophrastus, *De Sensibus*, §§ 1, 2, 27—37.

the other constituent of the universe, which alone is pure and unmixed and has nothing in common with anything else. This is Nous[1]. The part it played was to communicate the first impulse to that rotatory motion which ultimately evolved from the chaos in which all things were mixed the present order and regularity of the universe. Nous is in all living beings, great and small, in varying degrees. It governs and orders and knows. We fortunately possess the account which Anaxagoras himself gave of Nous, and upon the evidence the reader must decide for himself what was its nature[2]. Plato and Aristotle construed it as immaterial reason and censured the philosopher for not making more thoroughgoing use of its mighty agency. Returning now to sense, the contrast necessary to perception Anaxagoras found most clearly in touch, for our perception of temperature depends upon contrast. We know the taste of sweet and bitter only by contrast. Seeing, again, takes place by the reflection of an image in the pupil, but in a part of it which is of a different colour from the object seen. Eyes that see in the daytime are, generally speaking, dark, while animals with gleaming eyes see better by night.

Leucippus: Democritus.

In the Atomists the tendencies of earlier Greek thinkers reach mature development. The problem hitherto had been to determine what matter is, and Leucippus propounded a working hypothesis which has ever since been sufficient for the purposes of science. Though this theory is derived from sense, it departs very widely from the evidence of the senses. Knowledge, said Democritus, is of two kinds, genuine knowledge that there are atoms and void and nothing else, and knowledge which is dark or obscure, by which he meant the information given by the senses[3]. The existence of void apparently contradicts observation, experiment fails even now to obtain an absolute void. The properties of body are all given by sense. The Atomists accepted the evidence of sense for resistance, extension and weight (perhaps Democritus was unaware of this last quality), but rejected it for colours, sounds, odours and flavours. Out of impenetrable atoms of different shapes and sizes the whole universe is built up, and the different qualities in things are due either to difference of shape or size, or to different arrangements, of the atoms composing them[4]. The soul is no exception. It is a complex of atoms within the

[1] 404 a 25 sqq., 404 b 1—6, 405 a 13—21, 405 b 19—21, 429 a 18—20, b 23 sq.
[2] Frag. 12 D, quoted entire on p. 229 *infra*.
[3] Frag. 11 D apud Sext. Emp. *Adv. Mathematicos*, VII. 138 sq.
[4] *De A.* 404 a 1—4, *De Gen. et Corr.* I. 2, 315 b 6 sqq.

body. Soul-atoms are spherical in shape, extremely minute and mobile. They resemble the atoms of fire[1]. In thus postulating a body within the body to account for vital and intellectual functions, Democritus reverts more consistently and systematically than any previous philosopher to the standpoint of the savage who, when he sees an animal move, is unable to explain the fact except by supposing that there is a little animal inside to move him. But there is this difference, that the little animal is imagined to be alive, the soul-atoms of Democritus are mere matter[2]. Thus to push the implicit assumptions of their predecessors to their logical consequences and make the half-conscious hylozoism of the early Ionians blossom forth in materialism is the great merit of Leucippus and Democritus. All processes of sensation, then, are instances of the contact[3] between bodies. They are caused by "idols" or films which are constantly streaming off from the surface of bodies, of inconceivable thinness, yet preserving the relative shape of the parts. So far this agrees with Empedocles; but the latter made his emanations enter the body through channels, while the Atomists conceived them as entering by the void between the atoms. The same explanation would apply to thought, which is excited when the material image of an object enters the equally material mind. All the senses are thus but modifications of touch. This was made out satisfactorily for taste, and Democritus attempted to determine the shapes of the atoms which produce the different varieties of taste[4]. Things made of atoms angular, winding, small and thin, have an acid taste, those whose atoms are spherical and not too small taste sweet, and so on. His four simple colours, white, black, red and green, are accounted for by the shape and disposition of atoms, but a similar analysis was not attempted for the objects of sound and smell.

Diogenes of Apollonia.

In marked contrast with the attempts which the Atomists and even Empedocles made to bring physics and physiology into shape is the retrograde system of Diogenes of Apollonia, whose fantastic absurdities have been immortalised for us by Aristophanes. He was not satisfied with the resolution by Anaxagoras, himself a reactionary in physics, of bodies into infinitesimal particles possessing definite qualities, though he was

[1] 403 b 31—404 a 16, 405 a 5—13.
[2] Cf. *De A.* 406 b 15—22, 409 b 7—11.
[3] *De Sensu* 4, 442 a 29 sqq. For what follows see Theophrastus, *De Sensibus*, §§ 49—83, who treats of Democritus very fully.
[4] Theophrastus, *De Sensibus*, § 64 sqq.

more attracted by the supposition of unmixed Nous, which is the seat of intelligence. But he supplemented this theory by reverting to the position of the Ionians, one of whom, Anaximenes, had chosen air for his primary element. Diogenes endowed air with sentience and intelligence. "All creatures," he says, "live and see and hear by the same thing" (viz. air), "and from the same thing all derive their intelligence as well[1]." He thus made the air in us play an important part in the processes of perception and thought. From Alcmaeon he must have borrowed the idea that the brain is the central organ; the air in the sense-organs, the eye, the ear, the nostrils, transmitted the impression to the air in or near the brain. The common view that seeing takes place by the reflection of an image in the pupil he supplemented by postulating that this image must be blended with the internal air; otherwise, though the image is formed, there is no seeing. He pointed to the fact that, when the optic nerve is inflamed, blindness ensues because, as he thought, the admixture with the internal air is prevented. His account of hearing may be cited for the likeness it bears to that given in *De Anima*. "The animals which hear most acutely have slender veins, the orifice of the ear (like that of the nose) being in them short, slender and straight, and the external ear erect and large. For movement of the air in the ears sets in motion the internal air" [in or near the brain]. "Whereas, if the orifice be too wide, the movement of the air in the ears causes a ringing in them, and what is heard is indistinct noise, because the air upon which the audible sound impinges is not at rest[2]."

In the fifth century the evolution of successive systems came to a halt. The progress of enquiry had been marked by the foundation of new sciences like geometry and astronomy, both in a flourishing condition, and new arts, like rhetoric and dialectic. The bustle and unrest of the times was attended by a growing mistrust, not only of the old traditional religious and moral beliefs, but of the bewildering intellectual movement which in so short a space of time had put forward so many brilliant and contradictory speculations. The professional educators, whom we know as the Sophists, turned as a rule to practical interests and made humanism, literary criticism, erudition their main themes.

Protagoras.

Protagoras, the greatest of them, adopted a sceptical

[1] See Simplicius, *in Physica*, p. 151, 24—153, 24, Theophrastus, *De Sensibus*, §§ 39—48.

[2] Theophr. *De Sensibus*, § 41: cf. *De A*. 420 a 3 sqq.

attitude and maintained that man was the measure of all things, which, as interpreted by Plato, means that, as things appear to me, so they are to me, or the denial of objective truth. There were many sceptical currents in the sea of speculation on which Greece had embarked. The followers of Heraclitus pushed the doctrine of flux to an extreme. Things never are, but are always becoming, they have no fixed attributes. When we say that a thing is, we must in the same breath pronounce that it is not. There are always two of these fluxes, one the movement or change producing sensations, flux outside, the other the movement which receives the sensations, the flux of our senses. The result of the contact between them is that, for example, wood becomes white wood and the eye becomes a seeing eye. When the flux of Socrates well comes in contact with wine, the wine will be sweet, but, if he is ill, it will be sour. Both these statements will be true: in fact, all statements are true. What wine is depends entirely on the man perceiving it. There is no criterion of truth in external things, they change so rapidly. On the other hand, Gorgias of Leontini in his essay on Nature or the Non-existent hardly caricatured the position of the younger Eleatics when he put forward the thesis that, if anything existed, it could not be known, and, if anything did exist and was known, it could not be communicated. Such views as these or that of Euthydemus that falsehood is impossible are by no means universal among the Sophists, many of whom had no psychological or epistemological theories at all; and, where their views were sceptical, it was the scepticism not of one school, but of many. Aristotle justifies the revolt of the Sophists against philosophy, he holds that most of the leading Pre-Socratic systems tend implicitly or explicitly to the doctrine of Protagoras. Protagoras first called attention to the importance of the knowing mind in every act of knowledge. In the view of a plain man like Socrates all the systems were discredited and the question, what is knowledge, was for the time more urgent than the ambitious problems proposed by those who had sought to know the nature of the universe. Psychology can glean nothing from the ethical discussions of the historical Socrates. When he declared that virtue is knowledge, he was confessedly using the latter term as one which neither he nor his interlocutors could adequately define.

Plato.

Plato in his writings is always talking about the soul, but not all that he says is intended to be taken seriously. We must allow for the mythical element, and in

particular for his imaginative sympathy with the whole mass of floating legend, myth and dogma, of a partly religious, partly ethical character, which, as was stated above, found a wide but not universal acceptance at an early time in the Orphic and Pythagorean associations and brotherhoods[1]. The Platonic myths afford ample evidence that Plato was perfectly familiar with all the leading features of this strange creed. The divine origin of the soul, its fall from bliss and from the society of the gods, its long pilgrimage of penance through hundreds of generations, its task of purification from earthly pollution, its reincarnations in successive bodies, its upward or downward progress, and the law of retribution for all offences, these and kindred subjects the fancy of Plato has embellished with all the beauty and sublimity which the art of a lost poet could bestow upon prose. Such themes stir his imagination. His approval of ethical fiction is attested by his own words, but it would be the height of imprudence to infer that any part of his philosophy is bound up with his gorgeous poetical imagery. Plato never set about writing a treatise *De Anima*. We find anticipations of a science, but not the science itself. In each dialogue he has a particular end in view. He proposes to examine the doctrine of Protagoras or, it may be, the import of predication. Incidentally in the course of a long controversy we come across models of psychological analysis which for subtlety and insight have never been equalled. Such an analysis was something absolutely new. The psychical or mental states on which Plato fixed his attention had hitherto, when they were not ignored altogether, been confounded with their bodily concomitants: a mistake not unnatural, so long as both sensation and thought were regarded as changes in the body. In the *Theaetetus*[2] we find the following argument. We do not perceive by but through the senses. What we perceive through one sense we cannot perceive through another. Consequently, if we know something about both a sound and a colour, it cannot be known through sense. Now we do know many such things; that they are, that they are different from one another, that both are two things and that each is one. How do we know such facts? The soul apprehends them through itself without any sense-organs. Being and Not-Being, likeness and unlikeness, number, identity and diversity are not apprehended through sense, but through the soul alone. The soul apprehends the noble and the base, the good and the

[1] See Cornford, "Plato and Orpheus" in *Class. Rev.* XVII. pp. 433—445.
[2] 184 B—186 E.

bad, not through the senses, but by calculating in herself the past or present in relation to the future. All men and animals from the moment of birth have by nature sensations which pass through the body and reach the soul, but to compare these sensations in relation to Being and expediency comes with difficulty and requires a long time, much trouble and education. It is impossible to attain truth and know it without attaining Being; knowledge does not consist in affections of sense because we cannot by them attain Being. It is by reasoning about sensations that this is alone possible.

In the *Phaedo*[1] the Platonic Socrates undertakes to prove that learning is reminiscence, which indeed is implied by the fact that, if questions are properly put, the right answers are elicited, showing that the knowledge sought, the knowledge, *e.g.* of geometry, existed previously in the mind of the respondent. This proof is as follows. The picture of a lyre reminds us of the person who used the lyre, a picture of Simmias may remind us of Kebes or of Simmias himself, so that the reminiscence may be brought about either indirectly or directly. If it is effected directly and the object seen is similar to the object it recalls, we cannot fail to see how far the remembrance is exact. For instance, we affirm that there is an idea of equality which is called to our minds by our perception of sensibles which are equal. That this idea is something distinct from the equal sensibles is clear; for the sensibles may appear equal to one observer, unequal to another; but about the idea of equality no difference of opinion is possible. Now we are to observe that all sensible equals appear to us as falling short of the standard of absolute equality, which plainly shows that our knowledge of absolute equality is prior to our perception of the sensibles. And whereas (1) this sense of deficiency in the sensibles has been present so long as we have had any perceptions of them, (2) our perceptions of them date from the moment of our birth, it inevitably follows that our knowledge of the idea must have been acquired before our birth. Now this of course applies to all ideas as well as to that of equality. Since, then, we have obtained this knowledge, two alternatives are open: either we are born in full possession of it and retain it through life, or we lose it at birth and gradually regain it. The first must be dismissed on this ground: if a man knows a thing, he can give an account of it, but we see that men cannot give an account of the ideas: it

[1] 72 E—76 D. In the summary of the argument I have mainly followed that given by Mr Archer-Hind, p. 77.

follows then that the second alternative is true; we lose this knowledge and all learning is but the recovery of it. And since our souls certainly did not acquire it during their human life, they must have gained it before our birth and at birth lost it. Many more passages might be cited to prove that Plato kept the mental process distinct from the bodily process and that it is the former which he sought to explain.

Classification of mental operations.

Though the various mental operations are often discussed and distinguished, yet we find no exhaustive classification in any dialogue. The reason is obvious. The variation is due to the fact that each attempt at partial classification is made, as above stated, for a special purpose, to prove a particular conclusion in a particular dialogue. Thus in the *Republic*[1] the tripartite division into reason, passion and appetite is brought in to show the relation of justice to the other virtues, and this, again, whether subordinate to, or coordinate with, the analogy between the individual and the state, is a means to the determination of a perfect political constitution, which is said in the *Timaeus*[2] to have been the chief subject of the dialogue. Nor does this tripartite division itself tally either with that into knowledge, opinion (or sense-presentation) and ignorance[3], or again, with the fourfold division into thinking, understanding, belief and conjecture (an expansion probably of the distinction between knowledge and opinion), which we find in other parts of the *Republic*[4]. In the *Sophist*[5] discursive thought is a dialogue of the soul with herself, opinion is the silent assertion of the soul in which this results, imagining is a combination of opinion and sensation. In the *Philebus*[6] Plato goes more into detail and distinguishes sensation, memory, imagination and recollection. When the affections of the body do not reach the soul, the state of the soul is said to be insensibility or unconsciousness. When the affections of the body are communicated through the body to the soul, there is sensation. The retention of such a sensation is memory, its non-retention, the fading of memory, is forgetfulness. The recovery of lost memories by the soul without the aid of the body is recollection. Later in the dialogue[7] the relation of memory to imagination is illustrated: the former is a scribe or recorder, what it records being propositions, opinions; the latter is a painter,

[1] 434 C—445 E.
[2] 17 B, C. [3] 477 A sqq. [4] 511 D, E, 533 E, 534 A.
[5] 263 E sqq. Cf. *Theaetetus*, 189 E, *Phileb.* 38 D.
[6] 33 C—34 C. [7] 38 E—40 E.

whose glowing pictures excite hope. In this dialogue also there is a practical end, all these distinctions being subservient to the classification of pleasures as true or false. Similarly in a memorable passage of the *Theaetetus*[1] the introduction of two illustrations, one from a waxen block and the other from a dovecot or aviary, is incidental to a refutation of the thesis that knowledge is true opinion. But the similes in themselves are contributions to psychology of permanent value. That of the waxen block presents in its sum and substance the entire theory of sensation conceived as an impression from without, like the print of a seal upon wax, and the theory of memory as the retention of such impressions, the different degrees of retentiveness in individuals being ascribed to the size of the block, the quality of the wax and the number of impressions crowded together in small compass[2]. The other, that of the aviary, conveys in a striking manner the relation between memory and reminiscence, the latter being the deliberate recovery of lost impressions; at the same time it shows the relation between the mere possession of knowledge and its actual application or exercise.

Sensation.

The most comprehensive view of Plato's psychology is to be found in the *Timaeus*. He starts with reason or with the operations of intellect. The soul thinks. This process is first described as it goes on in the soul of the universe or universal soul and, because it is an activity, is compared with circular motion. The revolution of two circles, that of the Same and that of the Other, gives judgments of identity and difference, the two most important relations, and without such judgments there can be no knowledge. But this ceaseless activity of thought from time to time suffers disturbance, and the interference results in sensation. In the allegory the creation of particular souls follows upon the creation of universal soul, and it is to these particular souls, each united to a body, that the following description applies. When the revolutions of the immortal soul had thus been confined in a body, a body, as Plato says, "in-flowing and out-flowing continually," these revolutions, "being confined in a great river,

[1] 191 C sqq., 197 C sqq.

[2] The comparison of a present sensation with a previous impression implies some representative faculty; in this passage we hear of *ἔννοια* and *δόξα*, but not of *φαντασία*. Plato often uses *ἔννοια* for free constructive imagination. It is curious to find that, for the sake of an Homeric allusion and perhaps under the influence of a false etymology, Plato substitutes *ἐνσημαινόμενα εἰς τοῦτο τὸ τῆς ψυχῆς κέαρ* (194 C) for *εἰς τὸν τῆς ψυχῆς κηρόν*. But it would be a mistake to infer that he here favours the heart rather than the brain as the organ of *sensus communis*.

neither controlled it nor were controlled, but bore and were borne violently to and fro. For great as was the tide sweeping over them and flowing off which brought them sustenance, a yet greater tumult was caused by the effects of the bodies that struck against them; as when the body of any one came in contact with some alien fire that met it from without, or with solid earth, or with liquid glidings of water, or if he were caught in a tempest of winds borne on the air." The body of the animal, be it remembered, is composed of the same four elements, air, earth, fire, water, with which the animal comes in contact in alien bodies, whether in the process of nutrition or in that of sensation. "And so the motions from all these elements rushing through the body penetrated to the soul. This is in fact the reason why these have all alike been called and still are called sensations[1]. Then too did they produce the most wide and vehement agitation for the time being, joining with the perpetually streaming current in stirring and violently shaking the revolutions of the soul, so that they altogether hindered the circle of the Same by flowing contrary to it, and they stopped it from governing and from going; while the circle of the Other they displaced....So that the circles can barely hold to one another, and though they are in motion, it is motion without law, sometimes reversed, now slanting, and now inverted....And when from external objects there meets them anything that belongs to the class of the Same or to that of the Other, then they declare its relative sameness or difference quite contrariwise to the truth, and show themselves false and irrational; and no circuit is governor or leader in them at that time. And whenever sensations from without rushing up and falling upon them drag along with them the whole vessel of the soul, then the circuits seem to govern though they really are governed. On account then of all these experiences the soul is at first bereft of reason, now as in the beginning, when she is confined in a mortal body[2]." The soul, according to this account, is in ceaseless activity, and such normal activity, or thought, is from time to time disturbed by sensation, which has a tendency to pervert right thinking into falsehood and error. We might compare the definition from the *Philebus* above summarised[3], in which it is said that when the bodily affections pass through both body and soul and give rise there to a sort of shock or tremor not only peculiar to each, but shared

[1] Plato connects αἴσθησις with ἀΐσσειν.

[2] *Tim.* 43 A sqq., Archer-Hind's translation.

[3] 33 D.

by both in common, the movement which body and soul thus share may properly be called sensation.

Sense and reason. Plato started with intellect and thought. Rightly understood, he does not oppose body to soul, but rather sense to reason as one faculty of soul to another. But what are the limits of sense and reason? To which should be referred the knowledge of relations of cause and effect, of good and evil? Sense, we are told in the *Republic*[1], is sufficient where a thing does not tend to pass into or be confused with its opposite; where the data tend to become confused, sense is insufficient and we must appeal to intellect. What sense perceives confusedly thought thinks distinctly and in isolation. Sense at the best can only give opinion, but reason and true opinion are distinct "because they are different in origin and unlike in nature. The one is engendered in us by instruction, the other by persuasion; the one is ever accompanied by right understanding, the other is without understanding; the one is not to be moved by persuasion, the other yields to persuasion; true opinion we must admit is shared by all men, but reason by the gods alone and a very small portion of mankind[2]." Sense and thought are concerned with different objects, the particular and the universal. The defects of sense are not in the subject, but in the object, because the particulars of sense are in flux and have no fixed being. Protagoras held that sensible things have their so-called qualities only by acting or being acted upon and, as activity and passivity are always relative, no quality belongs to anything *per se*. We cannot say that they are *per se* anything in particular, or even that they are at all. They only become: things are always becoming, not being. When an object comes in contact with our sense-organ and interaction takes place, a sensation arises in the organ and simultaneously the object becomes possessed of a certain quality. But the sensation in the organ and the quality in the object are results which are produced only by the contact and last only as long as it lasts. In this doctrine of Heraclitus and Protagoras Plato acquiesced, so far as it relates to sense and sensibles. The testimony of Aristotle on this point is explicit[3] and the dialogues confirm it. But, instead of concluding with Protagoras that all presentations are relatively true and that there is no such thing as objective truth, he drew a different inference, viz. that, if there

[1] 523 A sqq.
[2] *Tim.* 51 E, Archer-Hind's translation.
[3] *Metaph.* [illegible], 1078 b 12—17.

is such a thing as knowledge, which he firmly believed, its object must be an intelligible object and an universal.

Physiology of the senses.

The process of sensation in the separate bodily organs is thus described in the *Timaeus*. "When that which is naturally mobile is impressed by ever such a slight affection, it spreads abroad the motion, the particles one upon another producing the same effect, until, coming to that which is conscious, it announces the property of the agent: but a substance that is immobile is too stable to spread the motion round about, and thus merely receives the affection, but does not stir any neighbouring part; so that, as the particles do not pass on one to another the original impulse which affected them, they keep it untransmitted to the entire creature and thus leave the recipient of the affection without sensation. This takes place with our bones and hair and all the parts we have which are formed mostly of earth: while the former conditions apply in the highest degree to sight and hearing, because they contain the greatest proportion of fire and air[1]." For the process of vision Plato adopts with modifications the theory of Empedocles, for the process of hearing that of the Pythagoreans. As to smell, he holds that odours cannot be classified according to kinds. For no element in its normal state can be perceived by smell, because the vessels of the nostrils are too narrow to admit water or earth and too wide to be excited by air or fire. They can thus only perceive an element in process of dissolution, when it is being liquefied or decomposed or dissolved or evaporated. The object of smell, then, is either vapour, which is water changing to air, or mist, which is air changing to water. The only classification we can make is that scents which disturb the substance of the nostrils are unpleasant, while those which restore the natural state are pleasant. In his account of tasting Plato makes the sensation depend upon the contraction or dilatation of the pores of the tongue by substances that are dissolved in the mouth, the peculiar effect of the principal flavours being briefly indicated. He made the flesh the organ of touch and, considering the various tactile sensations as relative to the tangibles, proceeds to explain what constitutes bodies hot and cold, hard and soft, heavy and light[2].

[1] Cf. *De A.* 425 a 3—7, 435 a 11—b 3.

[2] For the various senses see *Tim.* 45 B sqq., 61 C sqq., 65 C sqq., 66 D sqq., 67 A—68 D. See also Theophr. *De Sensibus*, §§ 61, 83—91.

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I have dwelt at what some may think inordinate length upon Plato, because in psychology, as elsewhere, making allowance for the fundamental difference between the two philosophers, we find nothing in Aristotle but the development in a systematic form of the Platonic heritage. It was the disciple's task to maintain on independent grounds the essentials of the master's doctrine on the subject of the soul, and to do this in face of the widely conflicting views and the general uncertainty which, as the foregoing sketch sufficiently shows, were prevalent at the time. With the conscious or half-conscious materialism of his predecessors Aristotle has no more sympathy than Plato and, as compared with this point of agreement, the differences between them count for little, however much Aristotle may exaggerate them. In the criticism which he passes upon the *Timaeus*[1] he affects to take the narrative literally. The point at issue is whether the activity which both Plato and Aristotle ascribe to the thinking soul can justly and reasonably be called a movement. The doctrine of the two philosophers is on all important points the same: they agree that there is an immortal soul and a mortal soul, that the immortal element thinks always and that thinking must belong to its essence. What Plato calls "movement" is familiar enough in Aristotle as "energy" or "activity[2]." If Plato would only say "energy," there would seemingly be no room for objection. But in the tenth book of the *Laws*, the work of his old age, when he may have been presumed to have had some acquaintance with the views of his disciple, Plato obdurately refused to say "energy," and by his classification of the ten species of motion assimilated physical movement and change to the only activity which in his view had reality, the "movement" of thought[3], defining the soul as that which is able to move itself. And after his death Xenocrates persisted in attributing "movement" to the number which is the soul. At this point a brief summary of the first part of Aristotle's treatise may be the best means of indicating the way in which the writer approaches his subject and the conclusions at which he arrives.

Aristotle's treatise.

At the outset, he says, we wish to ascertain the nature or substance, and the accidents, of the soul, which is a principle of

[1] *De A.* 406 b 26 sqq.

[2] "Breaking Plato's metaphor on the wheel," to cite a happy phrase, Aristotle slips back occasionally into the use of the metaphorical term himself, as in *Metaph.* 1072 a 30. Compare my *note* on 433 b 17.

[3] 893 B--895 A, 895 E sqq.

animal life. A few preliminary enquiries are suggested. Is soul "something"? Substance? Or quality? Or to which category does it belong? Is it potentially existent or is it an actuality? Is it divisible or without parts? This suggests the further question, Is it homogeneous in all species of animals? If not, are the differences between souls generic or specific differences? If it is without parts, it must be variable, there will be many sorts of soul. If it is homogeneous, the homogeneous soul must be made up of different parts. Ought we, then, to start with the whole soul or with the parts, ought we to study the parts first or their functions, and, if the functions, why not first the objects? As an apology for not deciding, it may be remarked that, while in order to know the properties of a thing, we ought to know its essence, yet knowledge of properties contributes to knowledge of essence: in fact, the one is involved in the other.

The attributes of the soul cannot properly be separated from those of the body. The one that seems most separable is thinking: but, if this is akin to imagining or if it involves an image, neither is thinking separable. If any attribute is peculiar to the soul itself, then soul may be independent of body; if not, soul cannot be so independent. The attributes of soul are notions or forms in matter and, as such, fall within the province of the physicist or natural philosopher, while the dialectician studies and defines their form apart from their matter. Here is the point of difference between the objects of physics and of mathematics: the attributes of soul as such, e.g. fear and anger, are inseparable from the physical matter of the animals to which they belong; the mathematical objects, e.g. line and surface, though really inseparable, are separable in thought from the concrete things to which they belong.

From this discussion of method we pass to consider the opinions of our predecessors. The characteristics of animate being are motion and sensation. Hence some have regarded the soul as *par excellence* the cause of motion, Democritus, who thought it fire, and Anaxagoras, being typical instances. All assumed that if a thing causes motion, it is itself moved. Others, again, start with the assumption that like is known by like and infer that the soul is composed of all the elements, whether they are one or many: Empedocles that it is composed of earth, air, fire and water; Plato of number. All definitions may be reduced to three: that it causes motion, is perceptive, is incorporeal. The last characteristic leads those to choose the finest matter, who acknowledge none but

corporeal elements. Subsequently it is objected that if the soul is a fine matter, as the soul is in all the sensitive body, we have two bodies in one.

The application of the idea of motion to the soul leads, it is argued, to absurdities. There are four kinds of motion, locomotion, qualitative change, decay, growth, and our enquiry is whether the soul is moved in and through itself, and not as sailors in a ship. All kinds of motion are in space; therefore, if the soul is moved, the soul must be in space. As it moves the body, it would naturally move like the body; and in that case it would go up and down in, and in and out of, the body. In general, we contend, the soul does not move the body, as Democritus supposed, by physical agency, but by means of purpose of some sort, that is, thought. The most thorough application of motion to explain soul, and in particular the soul which thinks, was made by Plato in the *Timaeus*, and this is criticised at some length. Like other theories, it neglects the relation between soul and body in virtue of which the soul acts, the body is acted upon, the soul moves and the body is moved.

Another definition of the soul makes it a harmony or blending of opposites. This notion may be applicable to health or any bodily excellence, but will not apply to the soul. Harmony will not cause motion. Harmony means either (1) a close fit or adjustment of bodies, or (2) the proportion in which elements are mixed. It is needless to show that the first meaning is inapplicable, there are so many fittings of the limbs. As to (2), in flesh and blood the elements are mixed in different proportions; which mixture is the soul? Returning to motion, we conclude that the only motion of which soul admits is motion *per accidens*, due to motion of the body, as whiteness is moved when a white body is moved. A stronger argument than any our predecessors have adduced is derived from the attributes of the soul, such as pain and pleasure, fear, anger, and other emotions, sensation and thought, all of which are commonly believed to be movements. In them, however, the soul is not moved: it is merely the cause of movement in the heart or some other bodily part. It would be better to ascribe these attributes to the man and say that he perceives or thinks or feels pleasure and pain with his soul. This leads to an interesting digression on intellect, followed by a refutation of Xenocrates, who defined the soul as a self-moving number. How can the attributes which are known to belong to soul possibly be deduced from such a definition? It will not afford even the slightest hint of them.

The same argument had previously been used against the definition of soul as a harmony.

Two characteristics of soul, (1) that it moves itself, (2) that it is composed of very fine matter, have now been dismissed. Against the third, that it is composed of the elements and that like knows like, it may be urged that then the soul ought to have in it all compounds, all categories. Moreover, a unifying principle would be needed[1]. The soul is not to be held divisible into parts independent of each other, for in that case what keeps its parts together? That must be the real soul. Again, as the whole soul keeps the whole body together, each part of the soul should keep a part of the body together: but we can assign no such function to intellect.

Book II. begins by defining the soul. We premise that of entities to which categories are applied substance is one, where by substance we mean either (1) matter, which is not yet anything in particular, or (2) form, which makes it something in particular, or (3) the union of matter and form in the particular thing. Under substance in the last sense is included a natural body partaking of life. What we mean by life is the power of the body to nourish itself and to grow and decay of itself. Body is clearly matter here, therefore soul is form. And, if for matter and form we substitute potentiality and actuality and distinguish the first stage of actuality, corresponding to knowledge, from the second, corresponding to the exercise of knowledge, the soul will be the first actuality of a natural body furnished with organs, or of a body that has in itself the principle of movement and rest. Thus soul is the quiddity or formal essence, to which we have analogies in the cutting power of the axe and the visual power of the eye, both actualities in the first degree, as contrasted with actual cutting and actual seeing, which are actualities in the second degree.

The definition thus found is the most comprehensive possible, applying to life in all its various forms, (1) intellect, (2) sense, (3) locomotion, (4) motion of nutrition, growth and decay. Plants exhibit life in its last form only. Animals, in addition to this, have sensation. Of the different senses touch is indispensable. Experiment shows that most of these vital functions are really inseparable from one another, though at the same time separable in thought. Whether this holds of intellect also it is not so easy to

[1] Aristotle's own view is that the sense-organs are composed of the elements, in touch all are blended. But sense is not this corporeal organ itself, but rather the character or power which resides in the organ.

decide. If to these vital functions be added appetence, which clearly is present where sensation is, a certain gradation can be recognised. They may be arranged in an ascending series. The lower can exist without the higher, but the higher in mortal creatures always involve the lower. And there is a similar gradation in the senses. It seems, then, that there is one definition of soul exactly as there is one definition of rectilinear figure. Alike in figures and in the various types of soul, the earlier members of the series exist implicitly and potentially in the later; the triangle is implicit in the quadrilateral and the nutritive faculty in the sensitive. The definition does not dispense us from investigating in detail what is the soul in the plant, in the brute, and in man.

Having reached this point, we naturally expect that each of the four main vital functions, nutrition, sensation, intellect, locomotion, will be investigated in detail; and this in fact is what the writer proceeds to do. Nutrition, growth and decay and reproduction, are dealt with briefly in Book II., c. 4; sense-perception at very great length, Book II., c. 5—Book III., c. 2; and imagination, which is intimately connected with sense, in Book III., c. 3; upon imagination follows intellect, Book III., cc. 4—8; and, lastly, the principle of progressive motion in animals, which is identified with appetence, occupies us in Book III., cc. 9—11. The treatise ends with an attempt, from the standpoint of teleology, to answer the question why the various forms of life occur in this ascending scale.

Method.

Aristotle himself was not consciously constructing a new science. His discussion of the soul was forced upon him when, traversing the wide domain he had set apart for his science of nature or physics, he passed from inorganic to the borders of organic life. The method of science laid down in the *Organon*, and hitherto pursued, is a method partly inductive, partly deductive, aiming to establish rational theories on empirical data and often falling short of its aim, because either the data were at fault or the theories inappropriate, or because there were defects in both. Natural science has to do with nature and with natural bodies, which by common consent are pre-eminently substances, sensible substances. Nature is itself a cause of things, the power in the things themselves which makes them what they are. Its characteristic is that, like human intelligence, it devises means to ends[1]. In this respect natural bodies or natural substances may be compared with the products of art and skill, but in the former

[1] 415 b 16 sq.

case the cause is, and in the latter case is not, in the product itself. We wish to know what are (1) the concrete natural substances, (2) their properties, (3) their physical changes, (4) the causes of these changes. If we could answer these questions, we should know the ends of nature in making concrete substances, the means used to realise these ends, the form and matter of which the substances consist. In logic we proceed from one determination to another. Psychology is concerned with mental acts or operations. In some of these operations we are conscious of a process; for example, in operations of reason we know how we reason, by what steps we advance. To search for a method is to aim at determining the order and arrangement in which these processes follow one another in any science. In geometry certain principles are assumed and necessary conclusions are deduced from them. Induction generalises from known particulars in order to obtain principles. Both induction and deduction may be combined in a more comprehensive method which, after establishing general principles, deduces derivative laws and verifies the particular conclusions which follow from them. But it may be impossible to apply this complete method directly in its simplicity. The effects, which are conclusions, may be known, while the causes are to seek. If so, it is necessary to infer backwards and discover the causes from the effects. The early progress of mathematics and astronomy, with their applications to optics and harmonics, led to the belief, which Plato endorses, that deduction is the method of scientific research. Aristotle agreed for pure mathematics, while in applied mathematics he regarded induction from the materials collected as, strictly speaking, lying outside of the science and subsidiary. But in the natural sciences, where we rise from effects to causes, a thorough description of facts is a necessary preliminary to the discovery of the ultimate principles, and the inverse method must be applied. The method of astronomy, we are told, was to collect the facts, the phenomena, and from them to deduce astronomical laws. The whole method is summed up with convenient brevity thus: "In every department of nature we must first ascertain the facts and then after that state the causes." The task to which the *History of Animals* is devoted is thus described: "First let us ascertain the existing varieties of animals and the properties of each, and after that we must try to discover their causes. This is the natural method which puts the collection of material fi[illegible]

[1] *Anal. Prior.* I. 30, 46 a 19 sqq., *De Part. An.* I. 1, 640 a 14, *Hist. A*[illegible]
8 sqq.

Characteristic of Aristotle's mind is the notion that some things can be got at both deductively and inductively: it is the consilience of fact and theory. The soul being a part of nature, psychology must needs be a branch of general physics, as all preceding thinkers, including Plato, agreed[1]. The presuppositions of Aristotle's metaphysics refer life to a cause. Vital phenomena, wherever found, are sufficiently alike in their manifestations to justify the assumption of one such cause. The treatise, then, is a preamble to all parts of the system dealing with plants, or animals, or with yet higher beings, if endowed with life. As one of the series of biological works, it stands in the closest connexion with the tracts known as the *Parva Naturalia*, with the morphological treatise *De Partibus Animalium*, and with that upon embryology, *De Generatione Animalium*. The part which the enquirer professes to take calls for very careful demarcation. It is impossible to say what contributions, if any, Aristotle himself made in the field of psychology: the presumption is that they were but small. The evidence of his dependence upon Plato for all that relates to psychical phenomena is so overwhelming[2], so constant. Possibly the repeated illustrations from zoophytes or stationary animals and from worms, which give signs of life after they have been severed into parts[3], are original; but in the main his facts are precisely the facts of his predecessors, the scantiest stock now at the disposal of any ignorant layman. Speculation had outrun observation. Nor is there any complaint of the scantiness of the data. No. Such as they are, they have already called forth too numerous and too divergent explanations. The writer's modest aim is by preliminary discussion to settle a few, just a few, fundamental questions as to the nature and attributes of the one principle of life and mind.

Body and soul.

Aristotle's enquiry is founded on his metaphysics. It is the business of natural science to discover form and matter in natural substances. Every animal, every plant is a natural substance, compounded of body, which is matter, and soul, which is form, and the science of nature has therefore to investigate both body and soul. Yet here a proviso is needed. Natural science does not necessarily treat of the whole

[1] *Metaph.* 1026 a 5, *De Part. An.* I. 1, 641 a 17 sqq.; cf. Plato, *Phaedrus*, 270 C sqq.

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soul. Wherever soul as form is in matter, wherever it employs a bodily organ, we are still in the domain of natural science; but anything included under soul which is independent of the body and which cannot be thus defined must be reserved for metaphysics[1]. The meaning which Aristotle attached to independence or separate existence must be grasped, if we would understand what he conceived by a substance or thing. Primarily this separate existence is the attribute of concrete particulars presented to sense in the external world. They are bodies locally, numerically and by magnitude separate. From them the conception is transferred to whatever the mind thinks as distinct, and even for immaterial notions Aristotle has no other formula. They, too, like concrete bodies, are described as being in time, in space and in conception separate or distinct[2]. In reducing soul to the logical essence or form of body Aristotle, according to his own presuppositions, so far from favouring materialism, secures once and for all the soul's absolute immateriality. The living body has inde[illegible]dent existence, has its own form and its own matter. Even a [illegible]dy or an inanimate thing is something existing inde-[illegible]which we can apply the pronoun "this[3]." But the [illegible]t in the same way. Nor, again, is it a thing [illegible]added to or subtracted from another thing, the [illegible]than form in general is a thing which can in [illegible]ion be united to and separated from its appropriate [illegible] brazen sphere be melted down, the brass remains. [illegible]is" something, "this" mass of metal; but we cannot [illegible] its spherical shape that it is "this" anything or that [illegible]nger exists. The lifeless body is like the eye which [illegible]e or the axe which is spoilt for use[5]. We may apply to [illegible]e same names as before; but, as the nature is no longer [illegible]me, the application is irrelevant, misleading, equivocal. But, [illegible]gh the lifeless body is still a concrete particular and a sub[illegible]ce, the soul apart from its relation to the body is no such [illegible]ng at all. Now the soul as form stands to the body as matter of the concrete individual precisely as the spherical shape to the brass, as vision to the eye, as cutting power to the axe. In every case the form is a quality predicable of the matter. But the

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body is not predicable of the soul, we cannot explain the soul in terms of body or make it a material thing, however fine the materials. On the contrary, we must explain body in terms of soul. It is form which determines and we only know a thing as determined. Primary matter, the absolutely indeterminate, is in itself unknowable[1]. Therefore, if we would know the living body, we must study its activities and operations and all the attributes which it acquires in virtue of soul. Soul and body, then, are not two distinct things, they are one thing presenting two distinct aspects. The soul is not body, but belongs to body[2]; it is not itself a concrete particular, although its presence in the body makes a concrete particular; it resides in a body and, what is more, in a body of a particular kind, furnished with the means whereby the functions of the soul can be exercised. The relation of matter to form in the particular thing is one instance of a relation of higher generality, that between potence and act[3], between the power to become and the realisation of that power in actuality. Before it is, a thing may be or may not be, and when it is, if it has the power to act, it may act or it may not act. Now body stands to soul, and matter to form in general, as the potential to the actual which has reached the first stage and already is: In other words, the soul is the power which the living body possesses and the lifeless body lacks. This is first actualisation or first entelechy. Again, the actual possession of faculties unused still stands to the exercise of these faculties in the relation of potence to act. Life itself, the use of actual power, is the second stage, energy. The actual use must be preceded by actual power. Soul is actual power to live, but is not life. In Plato body is opposed to soul. The body could be trained to obey the soul by gymnastic and music. In Aristotle the body is the natural instrument of the soul, and so the body into which a particular soul enters must be adapted to its use. This fact renders the Pythagorean idea of transmigration absurd[4]. Soul is likewise both the final and efficient cause of the body[5]. It is the final cause, because the soul is merely means to vital power and life; it is the efficient cause not only in the obvious case of progressive motion, but also in all the various changes which the body undergoes in the exercise of vital functions, including nutrition, growth, sensation.

[1] *Metaph.* 1036 a 2—9.
[2] 412 b 6 sqq., 414 a 19 sqq.
[3] 412 a 9 sqq., a 22 sqq., b 27 sqq.
[4] 407 b 20—26.
[5] 415 b 8 sqq.

Classification of vital powers.

Such, in brief, is the description of soul considered in and by itself, including the various separate powers, which are assumed to account for the varieties of vital and psychical operations. The great problem is how this multiplicity of acts or operations should be classified. Plato in some dialogues divides soul into parts, an immortal part, reason, and two mortal parts, passion and appetite. His pupil is more cautious. He does not go beyond the supposition of certain powers or faculties. In one sense, he says, this division into powers is illusory, for the powers of soul are really infinite in number[1]. But he contends that his own groups are convenient groups. Faculties, like every other basis of classification, are only means to an end. Plato, he thinks, should have added the nutritive and sensitive faculties. Desire, again, runs through all operations: there is the rational wish, the angry impulse and the instinctive appetite. Here at least it is clear that the different powers are but different capacities of the single soul. Yet his ignorance of the bodily conditions of thought and his consequent assumption of a separable and immortal part of soul leave Aristotle much in the same position as Plato. In order to get a clear view, special stress must be laid upon the statement that the powers of soul are arranged in an ascending scale[2]. In mortal creatures, at all events, the higher faculty always presupposes the lower, without which it cannot exist[3]. The lowest power, that of nutrition and propagation, is common to animals with plants; in plants it exists alone. Animals have sensitivity in addition: of the senses they must possess at least touch. So far we are on safe ground. From this point we may simplify in one of two ways. In the third Book the two faculties, sense and intellect, tend more and more to be conjoined as the judging faculty, while appetency, which in its lowest form is implied by sense[4], is made the principle on which progressive motion depends[5]. These considerations lead to the following scheme:

1. Nutritive	2. Discriminative		3. Motive	
	Sense	Intellect	Appetence	Faculty of locomotion

On the other hand, intellect is said to be the highest of all our powers, and the lower forms of appetency, as well as the power

[1] 432 a 22 sqq., 433 b 1—5. [2] 414 b 28—415 a 1. [3] 415 a 1—11. [4] 414 b 1 sqq. [5] 433 a 21 sqq.

of progressive motion, are associated with sense, while an intermediate place must be found for the imaginative faculty. These considerations suggest the following table of faculties:

1. Nutritive; 2. Sensitive, which is also appetitive; (this is in most animals joined with) 3. Locomotive; 4. Imaginative; 5. Intellective.

The soul of the plant.

In the ascending series of vital functions we start with the lowest, which constitute the sole life of plants and are an indispensable element in the life of animals. Their isolation from all others in the vegetable kingdom facilitates their study. We accordingly assume[1] a power of self-nourishment, the nutritive faculty. But we must be careful to remember that this faculty has also to account for growth, decay and reproduction; by which last it partakes, so far as it can, of immortality, the species of plants, as well as of animals, being imperishable, though the individual members of the species perish. If we are to define things by their end, the primary soul, the soul of the plant, is that which is capable of reproducing the species. But if the individual plant or animal is to be capable of this, it must be kept alive. Hence in a certain sense the subsidiary functions of nourishment and growth are even more important than the end to which they are means. Food or nutriment is the correlative object of the nutritive faculty, and we must determine how things are nourished. It was a common opinion that contraries are nourished by contraries. This is generally, but not always, true of the elements or simple bodies. Fire, Aristotle points out, is nourished by water, but not water by fire. Others said like was nourished by like. These two views can be reconciled. Undigested food is unlike, but food, when digested, has been assimilated to that which it nourishes, and then like is nourished by like. Nutrition, then, is motion or change, and it is easy to discover the movent, the instrument and the moved. Soul is the nourisher, food the instrument of nutrition, body the nourished. Vital heat, as well as food, is employed by the soul in the process, and we have an analogy in the steersman, who employs his hand to move the rudder with which he steers the ship.

Little suspecting what advances botanical science was to make, Aristotle denied that plants have sensitivity. He admits that they are affected by heat and cold, but only, he argues, as inanimate things are affected; that is, they are simply heated and cooled.

[1] II., c. 4. Cf. also 411 b 19—30, 413 a 25 sqq., 424 a 32 sqq., 432 b 17 sqq., 434 a 22—30, 435 a 25 sq.

They cannot receive the form of objects without the matter, and this because they have no organ in which the elements are so blended as to give the means of discriminating, say, cold and heat. When a plant touches an object, there is merely physical contact. Thus the excessive preponderance, as Aristotle supposed, of "earth" in the structure of plants precludes sensation, because it precludes the proper blending of the elements, which would be necessary to make organs of sense. The insensibility of certain tissues of the body, e.g. bones, sinews, hair, he explained in a similar way as due to the presence in them of too much earth: and in this erroneous view he followed Plato.

Sense-perception. The characteristic of animals when contrasted with plants is that they not only live, but have the power to perceive, which the Greeks regarded as essentially a cognitive power. They thought that we cannot perceive by sense without perceiving something, and interpreted this something objectively, as something which exists. The distinction so important for modern psychology between sensation and perception had not yet received much attention. For Aristotle, as for his predecessors, the main question is, in what does this operation of perceiving consist and how does it take place? We must describe the various kinds of perception and determine how perceiving is related to thinking, since both are cognitive. One distinctive mark is that by sense we perceive individuals[1]. But we have much knowledge of individuals which the five senses cannot give. Does, then, all this knowledge come from sense, or must it be referred in part to intellect, or must we invent new faculties or powers to account for it? Suffice it to say that, whenever perception takes place, an universal is perceived, but not directly and *per se*, only *per accidens*[2]. Directly sense perceives only "this," just as directly sense perceives it here and now. The operation of perceiving something existent is made by Aristotle to depend on his own physical theories of motion, of efficient cause and of essential form. One species of motion he defines as the production of an effect in matter by an efficient cause, as, e.g., the production of an impression upon wax by a seal or of an image in a mirror by a candle. Motions may be classified according to the categories as qualitative, quantitative or spatial, and the species of motion to which sense-perception is referred is the first species or qualitative change, the alteration or transformation which a thing undergoes

[1] 417 b 19 sqq.

[2] *Anal. Post.* I. 31, 87 b 28 sqq., II. 19, 100 a 17; *Metaph.* 1087 a 19 sqq.

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[3] 424 a 17 sqq.
[5] 425 b 22.

merely a potential patient, whatever else they may be actually. Applying this to perception, the external thing is always perceptible, a *percipiendum*, a potential *perceptum*, the sense-faculty is always potentially percipient: but in the process of perceiving the potential in both cases has been transformed into an actual. The eye, e.g., becomes a seeing eye, the whiteness whiteness perceived, and these two actualities reside in that which is passively affected, in the sense. In other words, the actuality of the sensible object is one and the same with (not merely similar to) the actuality of the perceiving subject[1], sense and sensible having in the act of perception one and the same essence, since the whiteness seen in the object is transferred to the visual faculty and, being an universal, a form, is one and the same, wherever it resides. Is this, we ask, a doctrine of relativity? Most certainly not. The followers of Protagoras are supposed to argue that, if the sensible quality is alone real, nothing would exist at all unless there were living beings to perceive, for without them there would be no perception. I grant, Aristotle replies, that in the absence of living beings there would be no act of perception, no affection of the percipient. But for all that, it would be impossible to get rid of things, which are potential causes of perception even when they are never perceived. For perception does not perceive itself, there is something beyond the perception; and this must be logically prior to the perception, since whatever causes motion or change must be prior to that which it moves or changes: and this is not the less true because sensible object and percipient are relative to each [illegible] In other words, the object perceived actually exists with [illegible] its own qualities, even when it is out of all relation [illegible] And similarly we may conceive a percipient out [illegible] object, none such being actually present. It [illegible] was, a power of perceiving, a faculty of

[illegible] most emphatically and most natur[illegible], a single power which resides in [illegible] regarded as a whole. But this [illegible] pluralised. Wherever a part [illegible] nd or function, it becomes [illegible] al power of perception, as [illegible] its separate sense-organs,

[1] [illegible] 26 sqq.

[illegible] *Metaph.* 1010 b 30—1011 a 2.

when it loses certain qualities and acquires new ones, remaining itself numerically the same. The form or essence without the matter is transmitted by the efficient cause or agent to the patient upon whom it acts, as when fire transmits heat to fuel. The form or essence is one in all the things thus affected. The one universal heat is the same wherever actually found, in fuel ignited, in water heated or in molten iron. Applying this physical theory, we should define the particular motion or qualitative change which we call perceiving by sense as the production of an effect in a particular part of the body, which we call a sense-organ, by a particular external thing, which we call the sensible object. But this is inadequate. Plants receive heat and cold and the air receives odour, but they do not perceive[1]. It is not enough, then, to say that perceiving is undergoing some affection or being acted upon. Besides, what is affected? Not the single organ, but the percipient as a whole: and we have seen that the animal is a particular case of composite substance, the body being matter, the sentient soul form. Now it is with the soul that we perceive, as it is with the soul that we live and think[2]. Let us, then, amend the definition. Perception is an alteration in the soul. It consists in the production by an external object of an effect in the sensitive faculty. This effect is the reception of the form, without the matter, of the external thing perceived[3].

Thus Aristotle is able to decide between the conflicting views of his predecessors, according to some of whom like acts upon like, while Heraclitus and Anaxagoras insisted that for any change to be perceived object and percipient must be unlike. As we saw about nutrition, both are right and both are wrong. The *percipiendum* is unlike, the *perceptum* is like, that which perceives it[4], for, when the process of perceiving takes place, both the external thing which causes it and the percipient affected by that cause have in the very act one common form which, like every universal, is the same wherever it is found. That which sees is in the act of vision in a way coloured[5], for it receives the same one form of colour which existed and exists in the coloured object perceived. But we may go a step further. Where one thing acts upon another, both the action and its effect reside in the patient, in that which is acted upon. Previous to their interaction, if they are physical bodies, the one is merely a potential agent, the other is

[1] 424 a 32—b 18.
[2] 414 a 12 sq., 408 b 13—18.
[3] 424 a 17 sqq.
[4] 416 b 35, 417 a 18—20, 418 a 3—6.
[5] 425 b 22.

merely a potential patient, whatever else they may be actually. Applying this to perception, the external thing is always perceptible, a *percipiendum*, a potential *perceptum*, the sense-faculty is always potentially percipient: but in the process of perceiving the potential in both cases has been transformed into an actual. The eye, e.g., becomes a seeing eye, the whiteness whiteness perceived, and these two actualities reside in that which is passively affected, in the sense. In other words, the actuality of the sensible object is one and the same with (not merely similar to) the actuality of the perceiving subject[1], sense and sensible having in the act of perception one and the same essence, since the whiteness seen in the object is transferred to the visual faculty and, being an universal, a form, is one and the same, wherever it resides. Is this, we ask, a doctrine of relativity? Most certainly not. The followers of Protagoras are supposed to argue that, if the sensible quality is alone real, nothing would exist at all unless there were living beings to perceive, for without them there would be no perception. I grant, Aristotle replies, that in the absence of living beings there would be no act of perception, no affection of the percipient. But for all that, it would be impossible to get rid of things, which are potential causes of perception even when they are never perceived. For perception does not perceive itself, there is something beyond the perception; and this must be logically prior to the perception, since whatever causes motion or change must be prior to that which it moves or changes: and this is not the less true because sensible object and percipient are relative to each other[2]. In other words, the object perceived actually exists with its own form, its own qualities, even when it is out of all relation to a percipient. And similarly we may conceive a percipient out of all relation to an object, none such being actually present. It is then what it always was, a power of perceiving, a faculty of sense, mere sensitivity.

These considerations apply most emphatically and most naturally to sense regarded as a whole, a single power which resides in the body of the animal, likewise regarded as a whole. But this power of perceiving is localised and pluralised. Wherever a part of the body subserves a particular end or function, it becomes an organ or instrument, and the general power of perception, as specialised in the five senses, employs its separate sense-organs,

[1] 425 b 26 sqq.
[2] *Metaph.* 1010 b 30—1011 a 2.

the eye, the ear, the nostril and the organs of taste and touch. For the detailed account of the modes in which they are employed, the medium which they necessarily imply and their special objects or provinces, the reader must be referred to Book II. cc. 7—11[1]. Here there is space only for a few general remarks. First, the parallelism between sense as a whole and the single special sense, e.g. sight or touch, must never be overlooked. "As the sensation of a part of the body is to that part, so is sensation as a whole to the whole sentient body as such[2]." Thus the sense of vision presides over its own special province of colour, bounded by the opposites, white, black, and embracing every intermediate shade[3]. The sense of touching has its special province, or rather provinces, especially temperature and resistance, bounded the former by the extremes of hot and cold, the latter of hard and soft, and including all varieties of temperature and resistance intermediate between the extremes in each province. Vision resides in the eye, touch in the internal organ of touch (probably the heart) or in the intra-organic medium, the flesh, according as we adopt the more scientific or the popular standpoint. To perceive is to undergo a qualitative change. In order, then, to become assimilated to the object, the organ must be capable of undergoing such change in the direction of either extreme or of any of the intermediate grades between these extremes. If it could not respond to the stimulus, as modern psychologists would say, at any point in the scale of colour, of temperature or of resistance, the failure on the part of the organ would be attended by mal-perception or non-perception on the part of the faculty. This is brought home to us whenever we try to employ our senses upon objects either altogether out of their range or such that the perception is at-

[1] As might be expected, the contributions to the physiology of the senses, and especially vision, are worthless. See Beare, *Greek Theories*, Introduction; also pp. 9—11. The mathematical researches of the Pythagoreans finally developed a more correct doctrine of sound and its propagation, to which the spurious treatise *De Audibilibus*, probably by Heraclides, bears testimony. See Jan, *Musici Scriptores*, pp. 50—57, who also traces (pp. 130 sqq.) to Archytas some of the theories found in Plato's *Timaeus*. For the helplessness of the Greeks in empirical science cf. Zeller, *Aristotle*, I. p. 443, Eng. Tr. From our superior knowledge we can afford to smile at the naive simplicity, the sheer audacity, which professes to explain growth, while knowing nothing of cells, discusses sensation and movement without understanding the nature and functions of the nervous system, and treats fire as an element in blissful ignorance of the chemical changes which go on during combustion. If Aristotle had been in possession of a microscope, it is probable that he would have made no better use of it than did Huxley's unsophisticated correspondent (see *Life of Huxley*, vol. II., pp. 365 sqq.).

[2] 412 b 23—25.

[3] 426 b 8 sqq., 422 b 19 sqq.

tended by pernicious effects, when we try to see in the dark or to look at the noonday sun or to plunge the hand in boiling water or to touch the air[1]. Now what is it which justifies our expectation that in normal cases a sensible object, when present, will be perceived? What are the physical or physiological grounds on which, with the science of his day, Aristotle based this belief? He accepted from Empedocles the false physics which resolved all bodies into four elements, air, earth, fire, water, with four primary qualities, hot, cold, wet, dry. These elements are found in their compounds in the outside world. They are also found all four mixed (we might say, chemically combined) in the tissues or homogeneous parts of animal bodies, of which, again, the heterogeneous parts or organs of animal bodies are composed. Hence there is a new application of the old maxim that like is known by like. The characteristic of each object perceived depends not so much upon the materials which enter into its composition as upon the combining ratio of those materials, which constitutes its form. When Empedocles resolved bone into definite proportions of his four elements, he was not far from realising that this combining ratio is the form which makes bone what it is[2]. So, too, with the sense-organ. It also has its combining ratio which constitutes its form, and this form, again, is the faculty residing in the organ. Hence sense as a whole, and each special sense, is a form, because it is the determining proportion or combining ratio of the tissues composing the organ[3]. In perceiving, form receives and apprehends form. In order that it may perceive all the qualities which come within its range, the sense must be neutral or indifferent to all, must be a mean between the opposite extremes which it can perceive and be actually neither of them[4]. In the organ of sense the constituent elements are blended in a certain way, e.g. the finger has a certain temperature. But, as by the definition perceiving is qualitative change, this temperature must be capable of variation in the direction of either extreme or of any grade intermediate to the extremes, and the constituent elements of the organ of sense must be blended in such a way as to allow of this. This possibility of variation serves to explain the discriminating power which attaches both to sense as a whole and to the single special senses. Whatever is intermediate be-

[1] 424 a 11 sqq.
[2] 408 a 13 sqq., 410 a 1 sq.; *Metaph.* 993 a 15 sqq.
[3] 429 b 14—16, 426 b 3, 432 a 2 sq.
[4] 423 b 30—424 a 10, 426 a 27—b 7.

tween two extremes is differently related to the one and to the other. In Aristotelian language, any point in the middle of a line is the beginning of the line in relation to one extremity, the end of the line in relation to the other. The single sense sight discriminates two shades of colour. It is in a certain relation to the first when it perceives the first, it is in a different relation to the second when it perceives the second. The discrimination measures the difference between these two relations.

The parallel between sense as a whole and the separate special senses extends to the objects directly perceived. The objects which the special senses directly perceive are known by two marks: they cannot be perceived by another special sense and the appropriate special sense cannot be mistaken about them[1]. The objects not exclusively belonging to this or that special sense, but perceived by two or more special senses, are referred to sense as a whole, often called *sensus communis*. Such percepts are shape and magnitude, unity and number, motion, rest and time. They include what Democritus considered and Locke called the primary qualities of body. About this common function of sense as a whole there has been much needless mystification. The sentient soul is one, and all the more important and more intellectual of its functions belong to it in virtue of this unity. As one, it perceives the common sensibles; as one, it pronounces judgments of identity and difference between sensibles; as a single faculty attendant upon each and every special sense, it is self-conscious[2]. That to sense as a whole, the so-called *sensus communis*, should be assigned functions which in degree, if not in kind[3], exceed those of the separate special senses, need not surprise us. For in sense we have a whole which is something more than the sum of its different parts. Analysis into its elements does not completely explain it, nor will the simple addition of these elements reproduce what was subjected to analysis. The operation of this single faculty is temporarily arrested in sleep, permanently in death. Lastly, to this faculty belong imagination, dreams and memory, which we are now to discuss.

[1] 418 a 7 sqq., 425 a 14 sqq., 428 b 18 sqq.

[2] 425 a 27, 426 b 20 sqq.; *De Somno* 2, 455 a 12 sqq.

[3] Some of these functions appear to be delegated by *sensus communis* to the special senses, if we interpret strictly the statements that each special sense discriminates the objects within its own province (426 b 10), and that it is by sight that we perceive that we see (425 b 12 sqq.). Probably, however, both statements require careful qualification, which the latter receives from *De Somno* 2, 455 a 12 sqq. Cf. Beare, *Greek Theories*, pp. 233, *n*. 2, 277.

Images and Sleep.

Sensation is defined as the production of an effect in the sense-organ, a part of the body, by an external object. It is, then, a movement or impression affecting the body and, so far as we are conscious of it, the sensitive soul as well. Now this movement does not always vanish with the disappearance of the object which caused it[1]. Instances may be given of its persistence, as our inability at first to see in a darkened room if we have just left the sunlight; or what is known as the after-image (more correctly, the after-percept) when, if we close our eyes after looking at the sun, we see a succession of images of it in different colours[2]. It is by facts like these that Aristotle explains imagination. He defines it as a motion generated by actual perception, a motion distinct from, yet similar to, the motion which constituted the original sensation[3], or, as Hobbes translates, "All fancies are motions within us, reliques of those made in the sense." In order to learn how wide is the range of the imaginative faculty we must turn to the tracts on *Sleep* and *Memory*. Sense itself is often mistaken in regard to the common sensibles and the things to which sensible qualities belong, for example, as to what the coloured or sonorous body is and where it is[4]: and these errors of sense are shared in and increased by imagination, especially when the sensible object is perceived from a distance. Illusion in general is due to the difference between imagination and judgment and between the standards they employ[5]. It may sometimes be corrected by one sense coming to the aid of another, as when the object perceived as double by crossed fingers is seen to be single[6]. The illusion that objects seem to move past us, when we in fact are travelling past them, implies that a movement is set up in the eye of the same kind as would occur if we were stationary and the objects themselves were in motion. In fact, the bodily movement induces a picture of the very object which might have been its cause. It is to the imaginative faculty that dreams must be ascribed[7]. Sleep is the arrest of the sensitive faculty as a whole or *sensus communis*, by which when awake we are conscious that we are awake and have sensations[8]. Plants, having no sensation,

[1] Cf. 408 b 18, 425 b 24 sq., 429 a 4; *De Insomn.* 2, 459 a 24—28.
[2] *De Insomn.* 2, 459 b 5—20.
[3] 428 b 10—429 a 5.
[4] 418 a 15 sq., 428 b 20 sqq.
[5] *De Insomn.* 2, 460 b 16 sqq., 1, 458 b 9 sqq.
[6] *ib.* 2, 460 b 20—27.
[7] *De Insomn.* 1, 459 a 14—22.
[8] *De Somno* 1, 454 b 25—27, 2, 455 a 12—b 2.

do not sleep[1]. In order that sense, which is charged with motive as well as perceptive functions, may recover from fatigue, sleep is necessary[2], and it is brought about ultimately by the process of nutrition[3]. An evaporation from the food in the stomach rises to the head[4], is there cooled and descends, causing a feeling of drowsiness. The surface of the body is cooled and what heat there is in the system collects about the heart[5]. It is clear that dreaming is not a function proper to sense as a whole nor to any special sense, much less to understanding or opinion[6]. Yet the images seen in dreams have sensible qualities. It only remains to refer dreaming to the same faculty as illusions in our waking hours. The residual movements in the organs are no doubt present in the daytime, but at night, when the action of the special senses is suspended[7] and the environment is peaceful, the imagination is most active[8]. Then *ex hypothesi* these persistent effects reach and stimulate the central organ of sense. We are most liable to illusions when labouring under emotion or morbid states[9], as, for example, when a patient in sickness mistakes figures on the wall for real animals[10] and even makes bodily movements to escape from them. In sleep, again, the judging faculty is weak[11], owing to the increasing pressure of blood around the heart[12]. There are, of course, cases in which dreams are the result of semi-conscious sensations, half-heard sounds or half-seen lights[13], which would have escaped attention in our waking hours: and reflections and ideas are often added to them[14]. But in itself dreaming is simply the result of the movement of our sensations during the period of sleep as such[15]. Dreams are movements which give rise to images within our sense-organs[16].

Memory-image.

The most important of all our images are those of memory. If imagining is consciously referred to an earlier perception of which the image is a copy, then we call it memory[17]. For memory there are two conditions, the affection now

[1] *De Somno* 1, 454 b 27—455 a 3.
[2] *ib.* 2, 455 b 13—22.
[3] *ib.* 3, 456 a 32 sqq.
[4] *ib.* 3, 456 b 17 sqq.
[5] *ib.* 3, 457 a 33 sqq.; *De Insomn.* 3, 461 a 3 sqq.
[6] *De Insomn.* 1, 458 b 9—459 a 9.
[7] *ib.* 3, 461 a 4.
[8] *ib.* 3, 461 a 14—b 30.
[9] *ib.* 2, 460 b 3 sqq.
[10] *ib.* 2, 460 b 11 sqq.
[11] *ib.* 3, 461 b 5—7.
[12] *ib.* 3, 461 b 11 sqq., 26 sq.
[13] *ib.* 3, 462 a 19 sqq.
[14] *ib.* 1, 458 b 15 sqq., 3, 462 a 5—7.
[15] *ib.* 3, 462 a 29—31.
[16] *ib.* 3, 462 a 8 sqq.
[17] *De Mem.* 1, 449 b 24 sq., 450 b 31—451 a 2, 15 *φαντάσματος, ὡς εἰκόνος οὗ φάντασμα, ἕξις*, where *ἕξις*, which is usually understood to mean "retention," may mean "reference."

present, and the perception of time[1]; in other words, not only images, but images regarded as decayed copies of earlier impressions, and this involves the perception of time. By memory we see distance, not indeed in space, but in time[2]. As memory is not confined to man, but extends to some of the lower animals, these latter must be credited with the imaginative faculty and the perception of time[3]. Here are very promising beginnings of a comparative psychology, which Aristotle, though he desiderated it in his predecessors, did very little himself to supply. His denial of understanding to brutes was a prejudice which a little research would have been able to surmount. As a matter of fact, he not only holds absolutely that, though the lower animals remember, they have no reasoning power, but, further, that, if memory were a function of pure intelligence alone, even man himself could not remember, since intellectual acts cannot be remembered *per se*[4]. What, then, can be remembered? The instrument of memory is the image. Hence whatever can be presented as an image can be directly remembered, all that cannot be presented as an image can only be remembered indirectly by means of the images with which it is associated. But how can we know the past which is not present, if our only instrument is a present affection, the image which survives after the original impression is gone[5]? Let us revert to the formation of images. The fact that a present movement of sensation sets up a subsidiary movement of imagination may be expressed in a different way, if we employ the metaphor of an impression, by which perception has been so often illustrated[6]. The act of perceiving, as it were, stamps a particular impression upon the sense-organ, as a seal ring stamps an impression upon wax. This impression, which remains, is a potential image so long as it is latent, an actual image when we become conscious that it is still present. Is it, then, this image, the reproduced impression, and not that of which it is an image, which we remember? If so, it may be urged, remembrance is not of the past at all. At that rate we might just as well suppose that in actual sensation also we see and hear what is not present to sense; an objection which cuts at the very root of every representative theory of perception. The objection is met by pointing out that in a certain way it is true that actual perception has for its object what is not present[7]. We see a

[1] *De Mem.* 1, 449 b 18—29, 450 b 11—20, 2, 451 a 20—31.
[2] *ib.* 2, 452 b 7 sqq.
[3] *ib.* 1, 450 a 15—22.
[4] *ib.* 1, 450 a 10—14.
[5] *ib.* 1, 450 a 25 sqq., 450 b 11 sqq.
[6] *ib.* 1, 450 a 30 sqq.
[7] *ib.* 1, 450 b 20 sqq.

likeness of an absent person: the picture is present, the original is not. The picture, though numerically one and the same, may be regarded in two ways, either as a simple picture or, in relation to the original, as a likeness. Apply this to the memory-image. It, too, may be regarded in itself simply as an image before the mind, or in relation to something else of which it is a representation. If viewed in the latter aspect, it is a memorial or reminder of an earlier perception which it recalls. It is distinguished from other images by its reference to time past and by the fact that it is, what many images are not, a copy or representation. Memory may accordingly be defined not simply as a retention, but rather as a reference, of a mental presentation as a likeness to the original of which it is a likeness. All representations are likewise presentations. Images are before us in memory, in present sensation and in expectation, whether hope, fear, or desire, but we refer these images to the past, the present, and the future respectively[1]. In all three cases something is presented, and the only way of distinguishing them is the accompanying perception of time, one of the common sensibles. Confusion of memory with imagination is one case of hallucination: thus Antipheron of Oreus was a type of mental derangement when he mistook what he only fancied for a past experience[2]. So far, then, like imagining in general, memory is a function of *sensus communis*, and hence it is to the central organ of sense that we must refer this movement or impression or image, or whatever else we call the corporeal change in question.

The distinction between memory and reminiscence or recollection is never very clearly stated by Aristotle, but, if we attend to what he says about acquiring knowledge and reacquiring it, i.e. about learning for the first time and learning over again what we have forgotten (neither of which, of course, is to be identified with memory or recollection), it seems that the case may be put as follows[3]. When we retain what we learn, whether by sense or thought, we are said to remember. Recollection implies the recovery of what has temporarily been obscured without going through the process of re-learning, and this whether the recovery is due to voluntary effort or is involuntary. We can remember without recollecting, if the image has never been lost, but is latent or potentially existent in us. When we recollect by voluntary effort we are conscious that it is lost and seek to recover it. Here

[1] *De Mem.* 1, 449 b 25—28.
[2] *ib.* 1, 451 a 8 sqq.
[3] *ib.* 2, 451 a 20—b 10.

I cite at length the account given by Wallace, p. xcv: "Recollection may take place either intentionally or unintentionally: we may, that is to say, recall some event of past experience either accidentally as it were or by the help of a distinct effort to call it back to mind; but in either case it is regulated by certain laws which it is one of the great psychological merits of Aristotle to have tabulated for us. The laws which thus express the mode in which the mind attempts to recall its past impressions are what have commonly been designated since Aristotle's day, the Laws of the Association of Ideas. But to Aristotle, it must be added, the laws in question have little or none of the significance which they have acquired in the hands of modern inquirers. To him they are simply a statement of the manner in which we seek to regain some fragments of knowledge which have for the moment got outside our consciousness. Recollection in short being the recalling of our past impressions, it follows that the success of our efforts to recall them will depend to no inconsiderable extent on the degree to which we can recall the order in which other impressions stood to that of which we are in search. But our impressions follow one another in memory in an order similar to that in which the actual sensations succeeded one another. Recollection thus involves a study of the laws of sequence in the order of our ideas: and Aristotle analyses the method of recalling past impressions in the following manner. 'When engaged in recollection we seek to excite some of our previous movements, until we come to that which the movement or impression of which we are in search was wont to follow. And hence we seek to reach this preceding impression by starting in our thought from an object present to us or something else whether it be similar, contrary or contiguous to that of which we are in search; recollection taking place in this manner because the movements are in one case identical, in another case coincident and in the last case partly overlap[1].' Similarity, contrariety and contiguity are thus to Aristotle the three principles by which for purposes of recollection our ideas and impressions have to be guided. Our sensuous movements and impressions really follow one another in an order corresponding to that of external nature. Thus, the more order and arrangement there is in the elements of our experience—the better connected our ideas are—the more easily will they be remembered[2]. And again the greater number of times we have established a connection between our

[1] *De Mem.* 2, 451 b 16—22.

[2] *ib.* 2, 452 a 1—3.

would seem to be a self-existing substance which comes into play in us and is in itself imperishable, in spite of senile decay. Thought and its exercise are enfeebled when something internal is destroyed, but the intellect in itself is impassive. Memory, love and hate are not affections of the intellect, which is something more divine and is impassive[1]. In criticising Empedocles, Aristotle remarks that it is impossible for soul, and still more impossible for intellect, to have anything superior to it and overruling it, to it belongs a natural priority and authority[2]. It is difficult to conjecture what part of the body intellect holds together or how it can hold together any part[3]. After soul has been defined, we are told that there is as yet no evidence to show whether intellect is, like some of the other faculties of soul, really inseparable and only logically separable, from the rest. It would seem to be a distinct species of soul and capable of separation, as the immortal from the perishable[4]. Sensation is of particulars, knowledge of universals, which are in a manner in the soul itself. Hence it is in our power to think whenever we please[5]. To think is not the same thing as to have sensation, though they were identified by the ancients, who believed both to be corporeal changes[6]. Nor is thinking the same as imagination or as belief[7]. Imagination leads to action in the lower animals because they have no intellect, and sometimes in man when intellect is obscured by passion, disease or sleep[8].

What conclusions can be drawn from these scattered remarks? Apparently in one passage we have a choice of alternatives: either intellect is without parts (and therefore by the presuppositions of the Aristotelian system must be immaterial and an energy), or it is something continuous, which is, however, continuous only like a number or series, by sequence, and not by coherence, like a magnitude. A bodily organ, which has parts, would alone secure the continuity of coherence; and for such an organ there is, or so Aristotle believed, no evidence. With this agrees the tentative assumption that intellect is something impassive, independent and imperishable, since its decay in the individual is an accident and not its real essence.

The account of intellect in Book III., cc. 4—8, is condensed and imperfect and falls far short of the clearness which marks the exposition of sense-perception. Intellect is especially concerned with quiddities and universals. It employs no bodily organ, for of

[1] 408 b 18—29. [2] 410 b 12—15. [3] 411 b 18.
[4] 413 b 24—27. [5] 417 b 22 sqq. [6] 427 a 19 sqq.
[7] 427 b 14 sqq. [8] 429 a 4—8.

the functions of the nervous system Aristotle and his contemporaries had no idea. It contains a divine element, which is independent of the body and immortal. This summary tells us hardly any more than we have collected from the casual or polemical remarks in the previous part of the treatise. But Aristotle might fairly claim to have set before us his view both of (1) the difference between intellect and sense, and (2) the way in which thinking comes about: and this is all he promised at the outset[1].

(1) There is an analogy between sense and intellect, there is also a difference. Both furnish knowledge, both pass judgments, both are intermittent, sometimes in act, sometimes not. When in activity both have an object, the transition from the dormant power to its actual exercise does not depend upon sense alone or upon thought alone, and, when the activity is over, the alteration thus undergone leaves intellect absolutely, and sense to a great degree, unaffected. Sensitivity in the abstract is a form which knows or apprehends sensible forms. Similarly intellect is a form which knows or apprehends intelligible forms[2]. Moreover, in both sensation and intellection alike at the moment of apprehension, there is identity between the form which apprehends and the form which is apprehended. Again, sense-perception is always true of its own appropriate object, and similarly thinking is always true in respect of quiddities[3]. On the other hand, the external object which stimulates the sense-faculty to activity is an individual, a particular, and it is external to the percipient; whereas the universals, the forms which we think, are present in the understanding, at any rate, of the mature man. Sensation cannot dispense with a bodily organ, a part of the body appropriated to its special functions. For intellect no such organ can be discovered. Yet, when a sense-organ is wanting, the action of intellect is impeded, for all knowledge through that sense is cut off[4]. Moreover, excess in the sensible fatigues or destroys the organ of sense, but the activity of thinking cannot be thus impaired. Again, intellect is the higher faculty of the two and implies the lower; the lower does not imply the higher. For actual thinking the indispensable condition is the presence of a mental image, for, as we saw above, we think of nothing apart from continuity. Even when the object conceived is not itself a quantum, we nevertheless think of it as such. And we never think of objects without thinking them in time[5].

[1] 429 a 12 sq. [2] 431 b 20—432 a 3. [3] 430 b 29—31, 433 a 26.
[4] 432 a 7 sq. [5] *De Mem.* 1, 450 a 7—9.

(2) The process of thinking an object is explained in much the same way as the process of perceiving an object by sense. In spite of the differences stated above, both, as acts of apprehending, are assimilated to the process of reciprocal action between physical bodies. Apprehension is reception of form. If the mind knows objects by receiving them, since nothing receives what it already has, it must be assumed to be at first without them; and further, so long as it remains capable of thinking, the same condition must be fulfilled for every fresh act. Hence intellect must be impassive, suffering in no way by the change from power to act and, since it thinks all things or, in other words, is capable of receiving all forms, it must in itself be devoid of any form, though at the same time it "provides room for forms." It may be called, then, a mere aptitude or capacity to think. Until it actually thinks them, it is none of its objects, but becomes each object in turn when it thinks that object. In physical action there is a transference of essence or form: in combustion the form of heat is transferred from fire actually alight to combustible fuel. When a white object is perceived, the form of whiteness is transferred from the object to the eye and, as there is but one such form, is the same in the percipient sense as in the external object. And so when we think a stone, a horse, a triangle, the form or essence in our mind, the object of thought, is identically one with the form or essence outside *in rerum natura*. As a contribution to the theory of knowledge, this explanation is adequate. External things affect our sense. By sense we apprehend hot and cold and whatever other sensible qualities are accidents of flesh[1]. We think each sensible quality, generalising and abstracting the universals, of which sense by itself informs us only *per accidens*. The substance in which the attributes inhere, which is said to be indirectly perceived by sense, is directly judged and known by thought.

So far intellect has been treated as one. It is possible to apply to this unity the analysis which resolves particular things. When nature generates or art produces a concrete particular, three conditions are fulfilled. There is the efficient agent transmitting form, there is the passive recipient upon which form is impressed, and there is, lastly, the result of the process, the new particular into which matter impressed by form has been made. To manufacture a brazen sphere, we need the craftsman with the design in his mind and brass to receive that design. The form of a sphere is

[1] 429 b 14—16.

impressed upon the brass and a new particular is made, precisely as the form of humanity is transmitted from father to son[1]. Our knowledge and actual thinking answer to the manufactured product, they are generated in the receptive intellect by something which must be assumed in intellect itself to correspond to the efficient cause. That which on one view is the reception of essence, is on another the spontaneous transition from potence to act. This is true of sense. Sense becomes like its object, in quality identical therewith. But it is just as true to say that sense has risen from the lower stage of potence to the higher stage of act and realised itself in full activity. So, again, thinking is reception of the form or essence, but it is just as true to say that intellect has risen from the lower stage of potence to the higher stage of act and realised itself in full activity. Perception, it is true, cannot be explained without assuming interference from without. The occasion which supplies the stimulus to the transition must be something given. With thought it is different. The occasion, the stimulus, are not external, but internal. I may say, if I like, that my potential or passive intellect has been acted upon and educed into actuality: but what brought this about? A mental agent, the active intellect, has called forth this activity and produced the thought. In my individual experience the power to think precedes actual thinking, but the transition cannot be explained except by assuming the prior existence of the efficient cause which brought it about. This point once reached and the unity of intellect being resolved into agent and patient, it follows that the agent which we postulate must have the same attributes as the patient, of which we have experience. It must be separable, impassive and unmixed, because its essence is activity, as the essence of the other factor is potentiality. Could it be actually separated and exist independently, it would be eternal. But this eternity is not communicated to the other factor of intellect, or to the intellect as a whole. Is such a hypothesis necessary? Can the potential intellect be affected by external things? So far as these things have matter in them, they are objects of thought only potentially. The intelligible forms are implicit in the sensible forms, and intellect *ex hypothesi* has no special bodily organ. But so far as knowable things are pure forms, no such expedient is required. The question, then, why an active intellect is introduced, may be thus answered. It is in order to provide a cause of that transition from potence to act which takes place whenever we actually think.

[1] *Metaph.* 1032 a 12—1033 b 26.

Diverse interpretations.

The difficulty in understanding what Aristotle did or did not intend by this analysis of the intellect, or rather this distinction of the intellect which makes from the intellect which becomes, is notorious. The scanty comments of Theophrastus[1] develop various lines of acute criticism, which in my judgment are not incompatible with an acceptance of the doctrine. So much is clear, that Theophrastus considered intellect in both its forms, as making and becoming, to be our human intellect, which is connatural and in us from birth to death, though its origin is elsewhere. In face of the difficulties which he is at pains to develop he seems content to regard the passive intellect dependent upon the body and the human intellect which results from the union of the passive with the active as in a sense distinct, yet as in another sense one nature, in so far as the two are related to one another as matter and form are in the unitary thing. That the active intellect exists *per se* in man independent of the passive is nowhere stated or implied either by Aristotle or Theophrastus. From a casual criticism by Themistius[2] it appears that certain of his predecessors had identified the active intellect with the premisses from which all our knowledge is derived and with the knowledge itself which we gradually acquire. Alexander of Aphrodisias[3], who endeavoured to preserve faithfully the teaching of Aristotle and to present it as consistent, distinguished a material intellect and an intellect *in habitu*, which the former becomes by actual thinking and reception of the intelligible form. The material intellect is the mere aptitude for thinking: this is a power or faculty of the individual human soul, the form of the body. Lastly, there is the active intellect which is not a faculty or part of the human soul, though it is in it from birth to death whenever we actually think: not only when we think it or any of the immaterial forms with which it is identical, but also when we think forms in matter, for it is only through the agency of the active intellect that actual thinking is possible. Being wholly immaterial, energy devoid of all matter and potentiality, it always is, even when it is not thought by men; it is an eternal, imperishable, self-existent substance. There can be but one such substance: it must consequently be identified with the deity, the first cause of motion in the universe, whose nature and essence is activity, the energy of

[1] See Appendix, p. 589 sqq.

[2] 102, 32 sqq. H., 189, 17 sqq. Sp. This view follows from an extremely one-sided interpretation of the statement that νοῦς is τὰ νοητά.

[3] *De An.* 80, 16—92, 11, *Mantissa* 106, 19—113, 24.

thinking. In individual men it supervenes as something coming in from outside. It finds in the capacity of thinking which does belong to the human soul an instrument ready for its use, upon which it can work and produce actual thinking. As to the reason why men think not always, Alexander has no better explanation to offer than a suggestion of his teacher[1], that the craftsman is still a craftsman even when he has laid aside his tools. The eclectic Themistius[2] refused to identify the active intellect with the deity outside man. He appeals to two expressions of the master (1) "that these differences must be present in the soul," (2) "this alone is immortal and eternal," which he thinks Alexander's interpretation forces out of their natural meaning. As to (1) Alexander has his own explanation to offer, according to which the active intellect, and therefore the deity, is in our mind whenever we think: but there is some force in the contention that Aristotle would never have described the deity as "alone" immortal and eternal. However, the point in which Themistius agrees with Alexander is more important than the points in which they differ. He fully admits that the active intellect is one and the same in all men, it is distributed among different individuals as light is divided into single rays. Of the other commentators, the Neo-Platonist Simplicius[3] distorts Aristotle's account in order, as far as possible, to adapt it to his own philosophical presuppositions. According to him, the rational human soul is one immortal substance. It has three states: in the first it remains in itself; this is the active intellect. In the second it enters the body; it then knows nothing, but is the pure potentiality of thought. Intellect of the first stage acts upon intellect of the second stage, and the result is the third stage, when intellect is *in habitu* and acquires knowledge. The passive intellect is mortal, because it ceases to be passive and is absorbed in the higher or active intellect. It is not worth while to pursue the course of speculation further among Arabian philosophers and the schoolmen, in both of whom the theological bias is unmistakeable. Avicenna[4] was an original thinker who exerted a

[1] *Mantissa* 110, 4 ἤκουσα δὲ περὶ νοῦ τοῦ θύραθεν παρὰ Ἀριστοτέλους, ἃ διεσωσάμην κτέ. If this is not a pleasant fiction, which would be more incongruous in Alexander than the one joke in Thucydides (ὁ λέων ἐγέλασε), we must acquiesce in Zeller's conjecture Ἀριστοκλέους, *Phil. der Gr.* IV.[3], p. 785.

[2] 98, 12—109, 3 H, 181, 3—200, 25 Sp.

[3] 217, 23 sqq., 243, 10—245, 2, 246, 16—248, 17.

[4] I have not studied the mediaeval philosophers at first hand. For my acquaintance with them I am indebted mainly to Zabarella, Brentano, *Psychologie des Aristoteles*, pp. 8 sqq., who gives copious extracts, Ueberweg, *Geschichte der Philosophie*, Siebeck, *Geschichte der Psychologie*.

great influence on his successors; but neither his distinction of universals, *ante res, in rebus, post res*, nor his doctrine that these universals are at once substantial forms in things outside us and intelligible forms to the mind which thinks them by abstraction has any direct Aristotelian authority, and when he makes both forms alike emanate from the active intellect and ultimately from God, this doctrine becomes nearly akin to that of the Neo-Platonists. Averroes and Aquinas, though both professing to interpret Aristotle, modify his doctrines to suit their own preconceptions. According to the former, neither passive intellect nor active intellect is part of the human soul as defined in the definition. In scholastic language each is *forma assistens, superveniens* and not *forma dans esse homini*. Each is immortal and each is one and the same in all men. According to Aquinas, active intellect as well as passive intellect is a faculty of the rational human soul, which was created by the will of God and is yet immortal, having the power as form to provide a vehicle for itself after it is separated from its present body. Regarded as interpretations of Aristotle's doctrine, these two conflicting views, which divided the allegiance of the later schoolmen, cannot both be right, but may both be wrong. Aristotle himself was free from the preconceptions of his two commentators; he was not a Moslem mystic nor a Christian theologian.

These successive attempts to fill in the meagre outline presented by the text of *De Anima* proceed in two directions. Either they make the two intellects two faculties of the human soul, or they seek to identify one, if not both, of them, with an intelligence outside man. Alexander, Averroes, and in modern times, Ravaisson and Renan, have gone to the greatest lengths in the latter direction. But, if the act of thinking is independent of, or alien to, man's nature, how can the aptitude for thinking be any longer a part of it? Averroes no doubt is consistent: he declares the passive intellect also to be an immaterial substance and no part of the soul which is the form of the human body. But, in order to maintain this, he is obliged to do violence to the language of the treatise. In particular, his *virtus cogitativa*, with which, according to him, the definition of soul endows man, has to be divorced from intellect proper and reduced nearly to the level of *sensus communis* or imagination. Even then he is unable to explain why, after the definition of soul has been obtained, it should have been left an open question whether intellect properly so called is or is not a part of the soul[1], or why it should be designated as a "part" when

[1] 413 b 13—26, 415 a 11 sq.

at last it comes up for special treatment[1]. But in fact all views in which human intellect or a part of it is identified with the activity of divine intellect are met by the same insoluble difficulty: what is to be made of the intellect which becomes all things? Modern enquirers are hopelessly divided as to what the passive intellect is. Trendelenburg answers "all the lower faculties in contradistinction to the active intellect[2]," Zeller "the sum of those faculties of representation which go beyond imagination and sensible perception and yet fall short of that higher Thought, which has found peace in perfect unity with its object[3]," Ravaisson "the universal potentiality in the world of ideas[4]," Brentano "imagination[5]," Hertling "the cognitive faculty of the sensitive part[6]," and Hammond, if I understand him rightly, "the life of sensation as a potentially rational mass," "the sum of the deliverances of sense-perception and their re-wrought form in memory and phantasy, regarded as potentiality[7]." The last two would seem almost to identify its functions with those of *sensus communis* as a judging faculty. Now these various answers do not accord with the description in *De Anima* of the process and act of thinking, whether as apprehension of the intelligible object or as the judgment which makes two concepts one; they do not fit either the conception of intellect *in habitu*, the process by which knowledge is acquired, or the sharp distinction drawn between a thought and a mental image. Thinking is not the same as receiving or retaining or remembering or judging the percepts of sense, which are all individual and lack the universality required. Abstraction alone renders thought possible, and abstraction cannot be restricted to the active intellect. Again, all the operations of thought imply a single judging power. This position, which Aristotle has maintained for sense, he would certainly maintain as strongly for thought. When he controverts the Protagorean maxim and points out that it must lead to universal relativity, he contends that there is such a thing as absolute existence, a something determinate in itself apart from all relations, for presentation of an object implies a subject to whom the object is presented[8]. The

[1] 429 a 10.

[2] p. 405: "Omnes illas, quae praecedunt, facultates in unum quasi nodum collectas, quatenus ad res cogitandas postulantur, νοῦν παθητικὸν dictas esse iudicamus."

[3] *Aristotle*, II. p. 102 Eng. Tr.

[4] *Essai sur la Métaphysique d'Aristote*, I., pp. 586 sqq.: cf. II., pp. 17, 19.

[5] *Psychologie*, p. 208 sq.

[6] *Materie u. Form*, p. 174.

[7] pp. lxxxiii sq.

[8] *Metaph.* 1011 a 17—20.

object of thought, then, implies a thinking subject. If these modern interpreters were right in equating the intellect which becomes with one or other of the lower faculties or with the sum of them, then the functions of these faculties would be identical with the function of thought, so far as the intellect becomes all things. But the lower faculties, sense and imagination, never succeed in obtaining an object which is a true universal.

If, however, we vindicate the right to think for the intellect which becomes all objects and is said to be *in habitu* when it acquires knowledge, it would seem that this can only be done at the expense of the intellect which makes all objects. The functions of the latter are then reduced within the narrowest compass. According to some, it does not really think at all, it does little more than "illuminate" the mental image, thus facilitating the abstraction of the universal form. But Aristotle speaks of its perpetual activity, he says there is no intermission in its thought[1]. Yet it is not unreasonable to suppose that determinations so unlike as "pure potentiality" and "incessant activity" refer to the same thing under two different aspects. Each describes it abstractly, and, to know the whole, the two determinations must be combined. If there is within us a thought which is continuous and always in activity, at any rate experience does not tell us so[2], it can only be a conclusion of reason. How, then, did Aristotle reconcile this conclusion with the facts? Apparently he made this thinking latent. The intellect always thinks, but we do not remember. This, then, is what the attribute "potential" means as applied to the intellect[3]; and this agrees with the conception of the powers or faculties of the soul in general, which are permanent possessions, all dormant and unconscious, until roused to activity in consciousness. Here we may recall a previous use of the antithesis between potential and actual in Aristotle's account of imagination. The images or survivals of sensation are not always present to consciousness, yet Aristotle treats them as still in existence; they continue, he says, in the organs of sense, they are potential images while they are dormant, actual images when they are revived and reappear, as we should say, in consciousness[4]. It may be worth while to hazard the conjecture that the intellect which does not consciously think is

[1] So, at least, I understand 430 a 22.

[2] Cf. *Anal. Post.* II. 19, 99 b 25 *πότερον...αἱ ἕξεις...ἐνοῦσαι λελήθασιν.*

[3] Aristotle conceives *νοητὰ* to be directly presented, much as modern psychologists conceive perceptual objects to be directly presented and to form a perceptual continuum. Cf. *Metaph.* 1087 a 10—25.

[4] Cf. 425 b 24 sq., *De Insomn.* 2, 460 b 2 sq., 3, 461 b 11—17. See also p. liii.

similarly described as potential intellect, and yet all the time its thoughts are there, though its incessant activity is subconscious. It will be seen that, though I do not entirely agree with Wallace, I nevertheless recognise a certain element of truth in his solution of the difficulty. He thus conceives the relation of the two intellects: "the creative reason is the faculty which constantly interprets and as it were keeps up an intelligible world for experience to operate upon, while the receptive reason is the intellect applying itself in all the various processes which fill our minds with the materials of knowledge[1]." And again: "the two it must be remembered are not 'two reasons': they are merely different *modes* of viewing the work of reason[2]."

Desire and Volition.

In the account of sense and thought, with which we have been hitherto mainly occupied, the cognitive element is very prominent. It is natural to infer that our philosopher regards man chiefly on the intellectual side, as a spectator of the universe, a being who contemplates. And this impression would seem to be confirmed when we learn from the *Ethics* wherein man's chief good consists. But no Greek could overlook the other side of human nature. The conclusions of the *Ethics* must be taken in conjunction with the wider generalisations of the *Politics*; and, if the self or ego is identical with intellect, intellect is practical as well as theoretic. The true is in the same class with the good; good, real or apparent, is the goal of all striving and effort. With his teleological bias, Aristotle would have endorsed the words of a modern psychologist[3]: "Looking broadly at the progress of life, as it ascends through the animal kingdom and onwards through the history of man, it seems safe to say that knowledge is always a means to ends, is never an end by itself—till at length it becomes interesting and satisfying in itself. Psychologically, then, the sole function of perception and intellection is to guide action and

[1] p. xcviii.

[2] p. cxv. Wallace was not alone in holding that Aristotle never intended to affirm two distinct intellects, but only to distinguish two phases or aspects of the one intellect. A similar view is maintained on very different grounds by Bullinger, *Nus-Lehre*, pp. 34 sqq., and by Mr F. Granger, *Class. Rev.* VI. pp. 298—301, who states it as follows: "the reason is passive and affected by corporeal conditions, so far as it uses the φαντάσματα, grasping the εἴδη from among them. It is purely active only when it concerns itself with νοητά, among which itself is included." Cf. Brandis, *Gesch. der Entw.* I. p. 518, *Handbuch*, II. b, 1178. Kampe and Grote came to the conclusion that intellect, though separable from the human body, is not separable from body in general. They affirm that it has for its necessary substratum the ether, the most divine of the elements: Kampe, *Erkenntnisstheorie*, pp. 12—49, Grote, *Aristotle*, II. p. 220 sqq. See, however, Zeller, *Aristotle*, II. p. 95, *n.* 2, Eng. Tr.

[3] Professor James Ward, *Enc. Brit.*, Article on Psychology, p. 56.

subserve volition—more generally, to promote self-conservation and betterment." In *De Anima*, a professedly biological treatise, with the soul in all living things for its subject, this part of the enquiry is not pushed far[1]. The main outlines are given, but we must look elsewhere, and particularly to the *Ethics*, for further details. The problem is presented in a very simple fashion. In the animal world motion, in the sense of locomotion, is an all-pervading fact, and but slight observation suffices to show that this motion is not random or irregular, but is directed to an end. To what power or faculty, then, is it to be ascribed? The nutritive faculty, Aristotle thinks, sufficiently accounts for movements of growth and decay, whether in animals or plants, but not for the progressive movements of animals, movements prompted by want and directed to an end. If the nutritive faculty were sufficient to produce such movements, Aristotle adds with unconscious irony, plants would move spontaneously and would have organs adapted for the purpose. Nor can these movements be explained as due to the sensitive faculty, since there are whole genera of perfectly-developed animals of a low type which do not move from place to place. But if locomotion were implied in sensation, they, too, would have organs adapted for locomotion. Is intellect, then, the cause of which we are in search, as Plato thought? No. Intellect is either theoretical or practical. The former issues no command as to what we should avoid or pursue and, although the latter does issue such commands, they are not necessarily obeyed. The analogy of the arts, too, shows that, in order to produce action, something else is required beyond the mere knowledge of what is to be pursued or avoided. Shall we say, then, that there are two motives to action, (1) desire and (2) the intellect which calculates means to ends, the place of which latter in animals devoid of reason is taken by imagination? If so, how are the two connected? Desire is always of an end, and this end is the starting point for the calculations of the practical intellect. Intellect and desire, then, are connected by the ultimate unmoved movent, the end of action. It is this which stirs desire, while intellect, assuming that the end can be realised, calculates the steps towards its attainment. Thus the physician whose aim is to cure an ague assumes this to be done, just as if he were trying to solve a geometrical problem, and then reasons backwards from the patient's recovery to the normal temperature which this implies, from the normal temperature to the production of heat or cold, and from that to some remedy at

[1] See Book III. cc. 9—11.

his command; and thereupon, having reached the end of his calculations, he proceeds to act. Hence the statement that there are two motives to action calls for qualification. Had there been two, they would have had some common character, but as a matter of fact intellect is never a motive apart from desire. On the other hand, desire does sometimes move to action in spite of reason. Desire is thus found in all forms of mental life. In reason it is rational wish, but there are also irrational desires, anger and appetite, or mere desire of pleasure. In fact, an appetitive faculty must be assumed in which Plato's anger and appetite are both included, and Aristotle says quite fairly that the soul may be divided into many faculties, any two of which are more distinct than these two of Plato. Wherever in the animal world there is sense-perception, there is also the feeling of pleasure and pain. The pleasurable prompts desire, the painful aversion, and the survival of sense-impressions, which is imagination in its lowest form, can prompt to desire no less than the present object in the moment of perception. For the intellect images take the place of present sensation. A conflict of desires may arise, for though reason will judge correctly, anger or appetite may be blinded. They may take apparent good for real good, or they may interpret good as the pleasure of the moment. Every desire, whether rational or irrational, implies a corresponding image of the object desired. Hence a distinction between images, according as they proceed wholly from sense (and this class of images alone belongs to irrational animals) or proceed from reason, calculation; in fact, deliberation. This latter class of images is peculiar to man. Yet even in man in the abnormal state of incontinence the irrational desire gets the better of reason and controls action. In order to express the antecedents of action, whether of the normal or abnormal kind, Aristotle resorted to the analogy of the syllogism. From a universal major premiss and a particular minor a conclusion is inferred. For example, all men should take exercise, Callias is a man, *ergo* Callias should take exercise. His taking exercise is regarded as an inference from the premisses. It resembles the conclusion of a syllogism just in so far as a particular case is brought under a general rule. But this way of looking at the matter by no means ensures rational action or justifies the assumption that the intellect always calculates correctly, for incontinence has a syllogism of its own. For example, all sweet things are to be tasted, this thing before me is sweet: then, if you have the power and are not hindered, you cannot but at once put the conclusion

(this is to be tasted) into practice. In this way the triumph of the irrational impulse and the sacrifice of the permanent good to the pleasure of the moment may equally be considered to bring a particular case under a general rule. In other words, although reason has a natural right and ought to prevail, experience shows that it is not always effective, even in beings endowed with reason, who look before and after. When impulsive action has been distinguished from deliberative and we are dealing with the latter only, since purpose is desire following upon deliberation, if the purpose is to be all it should be, both the calculation or reasoning must be true and the desire right, and the very same things must be assented to by the reason and pursued by the desire[1].

In the foregoing sketch I have been content to let Aristotle speak for himself, piecing together various utterances and putting the best construction I could on what is obscure and enigmatical in them, but refraining as a rule from criticism. Obviously he studied psychology as a philosopher and was chiefly interested in it as it bore upon philosophical problems. He exalted the cognitive element, while his treatment of the emotions and the will is wholly inadequate, even if the *Ethics* and the *Rhetoric* be called in to redress the balance. It is now contended that the science of psychology, which has made vast strides since these humble beginnings, must be based exclusively upon individual experience and be made independent of physiology. Whatever can be set down to the credit of Aristotle as a psychologist rests upon the opposite assumptions. He approached his subject from the psychophysical standpoint, as it is called; he had his own representative theory of perception, his own account of the gradual ascent from sense, through memory, to science and reason. He could not escape the errors and confusion incident to such assumptions, if after all they are not ultimately valid. Thus we are brought face to face with grave metaphysical problems. But this is not the place to examine Aristotle's system as a whole, and without such an examination it is impossible to do justice either to his theory of knowledge or to the treatise on the soul.

[1] *Eth. Nic.* 1139 a 22—26.

INTRODUCTION. II.

THE TEXT.

The text of *De Anima* rests mainly on the authority of a single good manuscript, cod. Parisiensis 1853, better known by the symbol E, given it by Bekker. Trendelenburg[2], p. xvi, describes it thus; saeculi decimi, membranaceus, eleganter et perspicue scriptus, vocibus non seiunctis sed inter se ligatis. Torstrik adds, p. viii: In eo igitur codice qui sunt de Animâ libri duabus manibus scripti sunt, antiquissimis, elegantissimis, simillimis, sed duabus. Book I., Book III. and the fragments of a recension or paraphrase of Book II., different from the vulgate (see pp. 164 sqq. *infra*), are in the same hand as the *Physics*, which cod. E also contains, and have 38 lines to the page. Book II. in a complete form and in practically the same recension as all other manuscripts present is the work of another hand and has 48 lines to the page. Cod. E has been scrutinised by Bekker, Trendelenburg, Bussemaker, Pansch, Torstrik, Biehl, Stapfer and Rodier. For further information respecting its peculiarities I refer my readers to Trend.[1] pp. viii, xxiii—xliii, Trend.[2] pp. vi, xiv—xviii, Torstrik pp. ii, viii—xv, Stapfer, *Studia in Aristotelis de anima libros collata*, especially pp. 4—13. In Book III. cod. E is mutilated, one leaf, which should have come between fol. 200 and fol. 201, is missing: it doubtless contained upon its 76 lines the text from 430 a 24 *μνημονεύομεν* to 431 b 16 *ἐκεῖνα*, or 84 of Bekker's lines. Further, the last leaf is also wanting, which should have contained from 434 a 31, the *-θὲν* of *μηθέν*, to the end, 435 b 25, or about 86 of Bekker's lines. The loss of these two leaves is serious, but is in some measure compensated by the fact that for the whole of Book III. we have cod. L, Vaticanus 253, presenting a text which agrees more closely with that of cod. E than with that of the other extant manuscripts. Cod. L, which contains only the third book of *De Anima*, is described by Trend.[2], p. ix, as follows: codex chartaceus, foliis quaternis minoribus, satis recens, cuius librarius interdum scripturae compendia male intellexit. Hauthalius codicem bombycinum perspicue et diligenter

scriptum saeculi XIV esse litteris nobis significavit. A lectionum praestantia (saepius enim cum vetustissimo codice (E) consentit) antiquior quam recentior esse videatur.

Besides codd. E and L Bekker collated six other codices of later date, which he indicated by the symbols S T U V W X. To these in what follows I shall give the name of the S-X group. The six have, so far as I know, never been scrutinised or collated by anyone since Bekker. Torstrik consulted the manuscript materials (preserved in the Royal Library of Berlin), which Bekker collected for his edition, and was thus enabled from Bekker's own evidence to correct a few errors in Bekker's report of the readings of cod. S, as of cod. E (Torstrik, p. vii sq.: cf. *Philologus* XII. 3, pp. 494—530, XIII. 1, pp. 204—206). The conclusion which Stapfer[1] reached after careful study was that without a fresh collation of these six inferior codices the question of their mutual relationship and pedigree could not be definitely settled, but that the result of such a fresh collation would not be worth the trouble expended upon it (*Kritische Studien zu Aristoteles' Schrift von der Seele*, pp. 33 sq.). What is certain is that, while codd. E L go back to one common archetype, those belonging to the S-X group go back to another and a different common archetype. This result is established as follows:

(A) Cod. E has two lacunae, each, I conjecture, a line of its archetype, which the other six codices supply. These lacunae are 405 b 25 sq. *ἄλλο, καὶ τὴν ψυχὴν ὁμοίως ἕν τι τούτων* and 425 b 30 sq. *τότε ἡ κατ' ἐνέργειαν ἀκοὴ ἅμα γίνεται καὶ ὁ.* Further, cod. E in 44 several places omits a single particle, an article, adjective, noun or verb, or even two (and once three) words, which are supplied by the group S-X. On the other hand, there are 22 cases where cod. E has a slightly fuller text than the S-X group, the latter having omitted most frequently a particle, sometimes a noun or verb, and twice a couple of words (*ὁμοίως δὲ* 426 a 31, *ὁ νοῦς* 429 b 13).

(B) When we come to classify the readings in which cod. E differs[2] from the S-X group, we sometimes find (1) a different word or (2) a different inflexion of the same word. The following are instances. In all cases the reading put first is the reading of cod. E, that put second is the reading of the S-X group, while

[1] In all that follows upon the relationship of the manuscripts to each other I am largely indebted to Stapfer's two pamphlets.

[2] I mean the first hand of cod. E. See below as to the corrections.

the words within brackets denote variants in some of the six manuscripts of the S-X group.

(1) 402 a 26 *μόνον* : *μᾶλλον*, 403 a 19 *σημεῖον* : *μηνύει*, 403 b 12 *ὅσα* : *ὁπόσα*, 406 a 10 *δισσῶς* : *διχῶς*, 407 a 19 *ἤ* : *καί*, 409 b 9 *μικράς* : *σμικράς*, 409 b 11 *ταύτας* : *αὐτάς*, 410 a 7 *ἐνεῖναι* : *εἶναι*, 410 a 25 *τε* : *τι*, 410 b 18 *πάσης* : *ἁπάσης*, 411 a 30 *αὔξη* : *αὔξησις*, 426 b 2 *λιπαρά* : *πικρά*, 427 b 11 *ταὐτό* : *τὸ αὐτό*, 428 a 14 *ἐνεργῶς* : *ἐναργῶς*, 428 b 3 *ποδιος* : *ποδιαῖος*, 428 b 15 *αὐτῆς* : *αυτη*, 428 b 16 *κατὰ ταύτην* : *κατ' αὐτήν*, 429 a 9 *διότι* : *διὰ τί*, 429 a 14 *ὅτι* : *τι*[1], 432 b 9 *αὔξην* E (Trend.), *αὔξιν* E (Bek.) : *αὔξησιν*, 432 b 27 *ἐκείνων* : *κινῶν*, 433 a 18 *ὀρεκτόν* : *ὀρεκτικόν*, 434 a 3 *λύπην καὶ ἡδονὴν ἔχουσα* : *λύπη καὶ ἡδονὴ ἐνοῦσα*, 434 a 14 *ἐνῇ* : *γένηται*.

(2) 402 b 4 *μόνον* : *μόνης*, 402 b 6 *ἑκάστην* : *ἕκαστον* (*ἕτερον*), 402 b 8 *κατηγορεῖται*[2] : *κατηγοροῖτο*, 403 a 29 *ὁρίσαιντο* : *ὁρίσαιτο*, 405 a 8 *ἀποφαινόμενος* : *ἀποφηνάμενος*, 406 a 18 *ὑπάρχει* : *ὑπάρξει*, 406 b 23 *ταῦτα ταὐτά* : *τοῦτ' αὐτό* (*ποτε*), 407 a 11 *μορίῳ* : *τῶν μορίων*, 407 a 26 *ἡ μὲν οὖν ἀπόδειξις* : *αἱ δ' ἀποδείξεις*, 408 b 34 *ἴδια* : *ἰδίᾳ*, 409 b 7 *τοῖς σώμασι* : *τῷ σώματι*, 410 b 6 *γνωρίζει* : *γνωριεῖ*, 411 b 12 *ἡ ψυχή* : *τὴν ψυχήν*, 424 b 27 *ἐκλιπεῖν* : *ἐκλείπειν*, 425 b 1 *χολὴν ὅτι* : *ὅτι χολή*, 426 b 4 *ἄγεται* : *ἄγηται*, 428 b 16 *ὑπάρχει* : *ὑπάρχειν*, 428 b 20 *διαψεύσασθαι* : *διαψεύδεσθαι*, 428 b 30 *ἔχοι* : *ἔχει*, 429 a 2 *γιγνομένη* : *γιγνομένης*, 429 b 23 *ἀπαθής* : *ἀπαθές*, 430 a 11 *ἐκεῖνο* : *ἐκεῖνα*, 431 b 25 *δυνάμεις* : *τὰ δυνάμει*, 432 a 7 *αἰσθανόμενον* : *αἰσθανόμενος*, 432 a 12 sq. *φάντασμα* : *φαντάσματα*, 432 a 27 *ταύτας* : *ταῦτα*, *ib.* *φανεῖται* : *φαίνεται* (*φαίνονται*), 432 b 1 *τό* : *τῷ*.

(3) Where the words are the same in cod. E as in the other six codices, the order is sometimes different. The following are instances: 404 a 5 *τῆς ὅλης φύσεως στοιχεῖα λέγει* : *στοιχεῖα λέγει τῆς ὅλης φύσεως*, 404 a 28 *ψυχὴν ταὐτόν* : *ταὐτὸν* (*τὴν*) *ψυχήν*, 406 b 32 *κύκλους δύο* : *δύο κύκλους*, 407 b 2 *ἂν κινοῖτο* : *κινοῖτο ἄν*, 411 b 21 *μὴ καὶ* : *καὶ μή*, 428 a 7 *ὑπάρχοντος τούτων* : *τούτων ὑπάρχοντος*, 429 a 25 *τις γὰρ ἂν* : *γὰρ ἄν τις*, *ib.* *ἢ ψυχρὸς ἢ θερμός* : *θερμὸς ἢ ψυχρός*, 430 a 18 *ἀπαθὴς καὶ ἀμιγής* : *ἀμιγὴς καὶ ἀπαθής*, 430 a 19 *δ' αὐτό* : *αὐτὸ δ'*, 431 b 21 *ἐστι. πάντα γάρ ἤ* : *ἔστι πάντα. ἢ γάρ*, 432 b 30 *διώκειν ἢ φεύγειν* : *φεύγειν ἢ διώκειν*, 433 a 9 *ταῦτα δύο* : *δύο ταῦτα*, 433 a 27 *κινεῖ μέν* : *μὲν κινεῖ*, 433 b 18 *κίνησις ὄρεξις* : *ὄρεξις κίνησις*.

[1] Stapfer's statement (*Krit. Stud.*, p. 21) "E *τι* S T U V W X *ὅτι*" will mislead no one. By a similar inadvertence he has (p. 23) interchanged the authorities for 403 a 29 *ὁρίσαιντο* and *ὁρίσαιτο*.

[2] See Stapfer, *Stud.*, p. 5.

From the instances given under (A) we may at once conclude that neither any single manuscript of the group S-X nor their common archetype was copied from cod. E, but we cannot directly infer that cod. E was not copied from the archetype of group S-X, for the omissions in cod. E, even the larger ones, are accidental. But the passages adduced under (B) sufficiently prove that cod. E is independent of the archetype of the group S-X. Chance might account for two or three or even a dozen variations, but not for 50. There can be no connexion between cod. E and the archetype of the group S-X.

But had the six manuscripts of the group S-X a common archetype? Yes: not because of the common omissions, which are few and insignificant, but because of such variants as the following: 403 a 19 *σημεῖον* : *μηνύει*, the transposition of 404 a 5 already noticed, 425 b 1 *χολὴν ὅτι* : *ὅτι χολή*, 426 b 2 *λιπαρά* : *πικρά*, 434 a 3 *λύπην καὶ ἡδονὴν ἔχουσα* : *λύπη καὶ ἡδονὴ ἐνοῦσα*. Taken singly, the manuscripts of the group S-X are full of mistakes. There are many cases where they diverge from each other in all manner of ways; but, as soon as we get a reading or arrangement of the words which presents a noteworthy difference from that of cod. E, they all agree. In fact, it has been proposed to use a fresh symbol for the agreement of the group S-X, as opposed to cod. E.

But can we say how the manuscripts of the group S-X are related to each other? For example, in 403 b 2 U X have *εἶδος*, S T V W *ὁ δὲ* or *ὅδε*. Possibly the genuine tradition of the archetype may have come down to us in the numerical minority of the representatives of the group. It may be that four of the six represent one lost codex of equal value with the remaining two. Let us consider, besides 403 b 2 just mentioned, where U X have *εἶδος*, S T V, like E, *ὁ δὲ* and W *ὅδε*, 402 a 19 *ἀπόδειξίς τίς*, where *τίς* is omitted, not only by T U W X, but also by E; 403 b 26 *δυοῖν* T U, *δυεῖν* E, *δυσὶ* S V W X; 404 b 31 *ἀσωμάτους* X, *ἀσωμάτοις* E S T U V W; 405 a 11 *λεπτομέρειαν* corr. E and T, *μικρομέρειαν* pr. E U V W X, *μικρολεπτομέρειαν* S; 408 b 8 *τὸ* V, *τῷ* reliqui codd.; 410 a 6 *γένοντο* T V W, *ἐγένοντο* E S U X; 410 b 30 *δὲ* T W X and corr. E, *δὴ* reliqui codd.; 425 a 2 *τοῦ δι'* TW, *τοῖν* L, om. E S U V X; 426 a 1 *εἴπειεν* T W, *εἴποιεν* E L, *εἴποι* y, *φήσειεν* S U V X; 429 b 13 *ἔχοντι* T W X, om. E L S U V; 429 b 20 *ἄλλο* T V X, *ἄλλῳ* reliqui codd.; 431 b 27 *τὸ* T W, *τὸ* om. E L S U V X; 432 a 5 *ἐν* T W X, *ἐν* om. E L S U V; 433 b 16 sq. *τὸ ὀρεκτικὸν* T W X, *τὸ* om. E L S U V.

Cod. T and cod. W almost universally go together in the third book.

Another circumstance confirms the conclusion that the six manuscripts of the group S-X are derived from a common archetype. After cod. E had been copied, it was subjected to much revision and many corrections were entered, either between the lines or in the margin. A great number of these, which on palaeographical grounds are attributed to a second hand, agree in the main with the readings of the S-X group. Hence it may be inferred that the reviser, whether the original scribe or someone else[1], collated cod. E with a manuscript which, whether it was or was not the archetype of the group S-X, agreed generally with the distinctive readings of that group. In other words, corr. E agrees in the main with the manuscripts of the group S-X where they differ from the first hand[2] of E. Let us assume, then, that the text of Books I. and III. has come down by two independent traditions. The variations in Book II. are of minor importance, whether because, as Torstrik supposed, cod. E in the second Book follows a different authority from that which it follows in the other two Books, or because the two traditions never diverged to the same extent in this Book as in the others. It cannot be claimed that either is infallible. To begin with (A) omissions and insertions: if we examine the several instances in detail, the presumption is that the omissions are due to carelessness. The good manuscript E has this peculiarity in common with the late manuscript P^1 of the *Politics*[3], that it is apt to omit small words. It would be absurd to prefer a text which omitted 403 a 6 *δέ*, 403 a 18 *γάρ*, 407 b 9 *γε* (cf. 407 b 32, 409 a 30), 408 b 15 *οὔσης*, 408 b 19 *οὖσα*,

[1] In Books I. and III. Stapfer distinguishes three hands E, E^2, E^3, admitting that E^2 is hardly to be distinguished from E and that E^3 is the same hand in which Book II. is copied: "Eae igitur [correctiones] plurimae inveniuntur in primo et tertio libro, aliquot in secundo. Alterius vero manus scriptura proxime accedit ad prioris manus similitudinem. Etenim ab utrius calamo manaverit scriptura, solum cognosci potest cum ex aliarum quarundam litterarum forma, tum ex diphthongo '*ει*' facillime concluditur...Accedit, ut secunda manus aliquoties litteras radendo, prior nonnisi expungendo deleat. Tertiae vero manus litterarum ductus idem sunt ac librarii secundi libri" (Stapfer, *Studia*, p. 4).

[2] See Stapfer, *Krit. Stud.* p. 34: "Derselbe [der Archetypus von S T U V W X] gilt allgemein für verloren. Auch ich war dieser Ansicht, bis eingehendere Studien über die Korrekturen in E mich belehrten, dass die von zweiter Hand nach keiner anderen Vorlage gemacht sein können als nach diesem Archetypus. Die Gründe hiefür sind teils paläographischer, teils kritischer Natur."

[3] Since E is of the tenth century, P^1 of the fifteenth, it is quite possible that the archetype from which Demetrius Chalcondylas derived his copy may have deserved the censure which Newman passes upon it, vol. II. p. lvii, III. p. vii sq., *Class. Rev.* VII. p. 305.

429 b 21 ἄρα, 430 a 4 ἡ before θεωρητική (cf. 431 b 29, 432 a 15, b 15, b 28, 433 b 4), 431 b 24 εἰς, 432 b 13 τί, 433 b 31 καί: and these omissions are doubtless due to the same haste or carelessness which has mangled the text by curtailment in 409 a 10, 425 b 7, 428 b 3 sq., 432 a 2, as well as by the longer lacunae already enumerated. Only three times does it appear that cod. E is undoubtedly right in its omissions; 426 b 1, 429 b 8, 433 b 3. For my part, though I have not had the courage of my opinion, I think that in 428 b 2 φαίνεται δέ γε καὶ ψευδῆ is an improvement[1]: while, if we compare 433 a 9 with 433 a 17, two passages which ought to be similarly worded, the balance of probability surely inclines to the supposition that in both the scribe of E or of its archetype is at his old trick of omitting a small word, even though in the former passage all our other sources join in the error. On the other hand, cod. E seems redundant in 407 b 24, 411 b 4, 29, 425 b 3, 429 b 11, 13 (*bis*), 16: and that this, too, is due to carelessness is very evident in the dittography of διὸ καὶ 425 b 3 and the impossible article in 429 b 16. (B) A comparison, again, of the variations which depend either upon a different word (e.g. 403 a 19 σημεῖον : μηνύει) or a different inflexion of the same word shows that, although E is undoubtedly the best manuscript, it has no decisive superiority over the common archetype of the S-X group. The text printed in this edition, which differs very little from Torstrik and still less from Biehl, agrees in this respect 23 times with cod. E against the S-X group and 29 times with the latter against cod. E. On the other hand, out of 15 instances where the same words are differently arranged in cod. E and in the S-X group, I follow my predecessors in preferring the order of cod. E 12 times and the order of the S-X group only 3 times, viz. 411 b 21, 433 a 9, 433 b 18: though, as will be seen from my note on the last passage, I incline to think that there also the order given by cod. E may have been that of the original text. Biehl himself, who of all editors adhered most closely to cod. E, sometimes departed from it, and I have gone still further in this direction, as in 402 a 12, 402 a 19, 403 b 17, 407 a 26, 27, 408 a 21, 412 a 17, 418 b 22, 420 a 4, 427 a 14, 428 b 4, 431 b 25, 26, 431 b 27. On the other hand, I return to the reading of cod. E in 404 b 10, 413 a 29 sq., 426 a 27, 433 b 17.

Two other manuscripts have been collated since Bekker completed his labours. The one is Parisiensis 2034, collated by

[1] To the lemma of Philoponus 505, 15 I attach little value for reasons given below.

Trendelenburg and called by him P. Belger, however, preferred to denote it by y and has been followed by subsequent editors. It offers many peculiarities, which may sometimes be due to conjectural emendation or to the arbitrary selection of a scribe who was acquainted with the variations in older manuscripts. The other is Vaticanus 1339, from which Rabe published a collation of the second Book in 1891. Its symbol is P.

Besides certain essays by Alexander of Aphrodisias[1] and his own treatise *De Anima*, in which he follows the lines of Aristotle's, we have two paraphrases, one by Themistius and one by Sophonias. These are not, however, entirely paraphrase: a large proportion of commentary is interspersed. We have also two commentaries, one by Simplicius, the other ostensibly by Philoponus. Hayduck, who has re-edited Philoponus, inclines to think (p. v) that the commentary on Book III. is not by the same author as that upon Books I. and II., and attributes it conjecturally to Stephanus, the author of the extant commentary on Περὶ ἑρμηνείας. Four of these writers go back centuries beyond our oldest manuscript. Alexander lived at the end of the second century A.D., Themistius belongs to the latter half of the fourth, while Simplicius and Philoponus were contemporaries in the reign of Justinian in the sixth century. Of Sophonias Fabricius[2] says: "Quis ille Sophonias fuerit et quando vixerit, non liquet." But an extant manuscript of his paraphrase is of the thirteenth or fourteenth century. The writings of Alexander, including his lost commentary on *De Anima*, were used by all his successors, and Simplicius and Philoponus betray an acquaintance with Themistius[3]. So far, then, the suggestion of a continuous tradition among the commentators of Aristotle may be readily admitted. But with Alexander our stream of tradition stops: a gap of five centuries separates him from Aristotle and Theophrastus. It is a perfectly gratuitous assumption that these later commentators represent the unbroken tradition of the Peripatetic School[4], especially as Alexander is the

[1] viz. those collected in pp. 101—150 of the *Mantissa* (formerly known as the second book of his *De Anima*), also Ἀπορίαι καὶ λύσεις I. 2, 8, 11a, 11b, 17, 26, II. 2, 8, 9, 10, 24, 25, 26, 27, III. 2, 3, 6, 7, 8, 9, Περὶ κράσεως καὶ αὐξήσεως, pp. 213 sqq., ed. Bruns.

[2] As cited by Trend.[2], p. xi.

[3] Simpl. 151, 14, Philop. 408, 25; 409, 3; 410, 1. 35; 418, 25; 450, 9. 19; 508, 20; 514, 29. Cf. also Priscianus Lydus, *Prooem. Solutionum*, 42, 18.

[4] Rodier, vol. I. p. ii: "En lisant ces commentaires, on s'aperçoit bientôt que ceux qui les ont écrits possédaient, pour l'exégèse d'Aristote, des traditions qui remontaient jusqu'à ses disciples immédiats."

only one of them who can be reckoned as a genuine Peripatetic. For the interpretation and criticism of Aristotle in the earliest days of the school our only authority is Priscianus Lydus, a contemporary of Simplicius and Philoponus, who wrote *Metaphrasis in Theophrastum*. A portion of this is preserved and was edited by Bywater for the *Supplementum Aristotelicum*.

What aid, then, do these testimonia furnish to the text? From the nature of the case they must be subsidiary to ancient manuscripts. A paraphrast may indeed be content to repeat his author without change, as Themistius frequently does. But his main object is to render the meaning clear, and the freedom with which, in the pursuance of this object, he varies either the actual words or the arrangement of the words and sentences of his author must, even under the most favourable circumstances, render him a very unsafe guide to the reconstruction of the text. If anyone thinks this a harsh judgment, let him consider what sort of an idea we should have of the text of this treatise, supposing the manuscripts and commentaries had been lost and only Themistius and Sophonias preserved. The problem of determining what text or texts the paraphrast had before him is analogous to the problem of determining the reading of the manuscript or manuscripts used by William of Moerbeke when he made his Latin translation. We never can be sure that the paraphrast or translator confined himself to a single manuscript. In the particular case of Sophonias, however, the difficulty of this problem is greatly diminished. The attention bestowed upon him by Trendelenburg, Torstrik, Hayduck and Stapfer[1] has established this result, that his paraphrase agrees more nearly with cod. E than with any other of our manuscripts. The case of Themistius, Simplicius and Philoponus is different. A study of the critical notes in this edition will show that their evidence, such as it is, favours sometimes cod. E and at other times the readings of the S-X group. Sometimes, as may be seen from my notes on 420 a 4, the words of Themistius suggest one reading, but can be shown to be in all probability an intentional variation upon the other. The evidence to be obtained from the commentaries of Simplicius and Philoponus must in each case be weighed independently of the prefixed lemma. I heartily endorse the judgment of Torstrik, p. vi: Philoponi et Simplicii ῥητά nullius sunt momenti. He adds: pertinent enim ad deterioris

[1] *Studia*, pp. 15—25.

familiae codices: licebatque eos negligere uno excepto loco. Sed quum in Philoponi commentario passim natarent quaedam ῥητά antiquiora et librariorum errore cum ipsa interpretatione commixta, haec exscripsi...duabus de causis: primum quod habent quaedam bona: deinde ne nocerent: possunt enim facile pro iis haberi quae ipse Philoponus apud Aristotelem legerit. It is by no means certain that the lemma comes from the commentator at all: at most, he was probably content for brevity to indicate the first words and the last, with ἕως τοῦ interposed, or the first words followed by καὶ τὰ ἑξῆς, a practice which may still occasionally be detected in Simplicius, e.g. *in Phys.* 50, 5; 113, 20; 114, 23; 440, 18; 935, 21; 1220, 27; *De Anima* 71, 11 sq.; 76, 13; 93, 15; 99, 5; 163, 27: 192, 22; cf. Philop. 431, 30. Subsequent copyists would expand the lemma[1] and piously supply the missing words from the best text of Aristotle available, without paying much regard to the indications of the commentary appended. This may be illustrated by a comparison of the Aldine editions of Simplicius and Philoponus with those recently edited by Hayduck. Trincavellus took his lemma with almost unfailing regularity from the Aldine edition of Aristotle. This fact is many times admitted by Hayduck in the course of his critical apparatus. See, e.g., 315, 8; 374, 14; 388, 11; 394, 33; 423, 25; 425, 1; 441, 12; 451, 29; 461, 1; 467, 25; 473, 30; 483, 17; 492, 22; 498, 12; 505, 15; 513, 21; 530, 28; 533, 14; 553, 17; 562, 5; 569, 25; 606, 3. But the same thing is true of scores of passages where Hayduck has not pointed out the dependence of Trincavellus upon the Aldine, e.g., Philop. 179, 27 καὶ om.; 181, 10 δέ; 189, 8 παραλογώτερον; 189, 28 ἀπολαβεῖν; *ib.* περὶ insert.; 192, 14 τῇ om.; 210, 26 ὕλη; 236, 14 καὶ ὥσπερ; 236, 15 οὕτω καί; 237, 27 καὶ πότερον μόρια; 260, 4 δὲ τὸ; 260, 26 τὰ μέν; 263, 25 λόγον; 267, 18 τῶν ἐν τοῖς ζῶσιν ἔργων; 273, 34 ἔστι δέ; 274, 25 ἡ ψυχή; 283, 21 ἔτι τροφὴ πάσχει τι; 284, 30 ἐπεὶ δ' οὐδέ; 320, 2 ὅτι om.; 345, 31 δὲ καί; 423, 26 ἔκδηλον; 477, 3 sq. μέν, ὅταν ἄγηται, εἰλικρινῆ καὶ ἀμιγῆ ὄντα ἄγεται εἰς; 524, 18 αὐτοῦ; 585, 17 post κινοῦν add. πρώτως. In all these cases the reading indicated must have come from the Aldine edition. It is not known from any manuscript of *De Anima*. Besides these differences, wherever the Aldine edition presents a peculiar order of words, this order is adopted by Trincavellus for the lemma of Philoponus. Asulanus made a similar use of the Aldine Aristotle for his edition of Simplicius, as may

[1] Trincavellus certainly did this. See Hayduck's critical notes on Philop. 211, 9; 288, 22; 304, 10; 461, 1.

be seen from such instances as Simpl. 11, 1; 16, 31; 23, 1; 72, 17; 82, 13; 271, 11. It is reasonable to infer that the same thing had been done before. For, even when the interference of the Aldine Aristotle is excluded, as it is in Hayduck's edition, lemma and interpretation are not always completely in accord. See for example Philop. 247, 13; 303, 31; 461, 1, where Hayduck has adapted the lemma to suit the interpretation (as he has also done e.g. 475, 28; 534, 17; 574, 23); 553, 17. Compare also 45, 16 *σώματος* with 46, 5 *τοῦ σώματος*; 186, 22 with 186, 24; 241, 16 with 241, 21 and 261, 15; 315, 7 with 315, 10; 348, 9 with 348, 10; 377, 32 with 378, 1; 425, 1 with 425, 22; 493, 15 with 493, 17; 560, 23 with 560, 26. The same tendency is seen in Themistius, and the last editor, Heinze, may be within his rights in altering the words or the order of the words in the paraphrase, in spite of his manuscripts, to ensure consistency with the context as a whole. Two notable instances are Them. 116, 18, where Heinze has substituted *τἆλλα* for *ταῦτα*, and Them. 58, 9 sq., where the alteration affects the order of the words. The commentators, then, as distinct from their copyists, are only to be held responsible for those variants which they either distinctly attest by *διττὴ ἡ γραφὴ* and the like or cite *verbatim* in the course of their interpretations. Even then caution is needed, since Philoponus is not alone in using *φησὶν* for a paraphrase and alteration of the Aristotelian text, much as Froude may be said to have violated the sanctity of inverted commas when he printed between them his own abstracts of the documents he cited. All beyond this is matter of inference, often no doubt correct, but seldom sufficiently strong to stifle a feeling of uneasiness and uncertainty. For the rest, the readings of Simplicius and Philoponus, and indeed of Alexander and Plutarch in the few cases where we have information about them, do not seem uniformly to favour either cod. E or the S-X group. A few instances of bad readings are appended. In 431 a 24 Simplicius read *ὁμογενῆ*: if he had consulted Philoponus 561, 6 sq. he might have found the right reading, *μὴ ὁμογενῆ*. In 416 b 27 Alexander and Simplicius read *κινοῦν μόνον* with the S-X group, while cod. E has the support of Themistius and Sophonias. Philoponus knew both readings (288, 10 sq.). Where the manuscripts leave us in the lurch, it is seldom that a commentator helps us out, as Simplicius undoubtedly does in 403 b 12 by reading *ᾗ*, not *ἢ*, and in 431 a 23 by reading *ὂν*, not *ὄν*. It is very significant that in both these cases the change required is a change of breathing, which would not be indicated in an uncial manuscript or older

kind of papyrus. The reader of an ancient book understood as no modern can the meaning of the line *νοῦς ὁρῇ καὶ νοῦς ἀκούει, τἄλλα κωφὰ καὶ τυφλά*[1]. On the other hand compare 431 a 11, where Simplicius prefers ᾗ to the ᾗ which is presented (rightly, as I think) by Philoponus. Again, the right sense could sometimes be got out of a bad reading. Thus in 431 b 17 Simplicius read with most of the S–X group *ὅλως δὲ ὁ νοῦς ἐστιν ὁ κατ' ἐνέργειαν τὰ πράγματα νοῶν*, but he escaped the absurdity which results from such a reading by suggesting that *τὰ πράγματα* should be transposed to precede *ὁ κατ' ἐνέργειαν* (Simpl. 279, 7–9). In short, the text which the commentators had before them was substantially the same as that of our manuscripts. They all found in it *μαρτυρεῖ τὸ νῦν λεχθὲν* 410 a 29, *τῶν αἰτίων* 430 b 25, *ἀλλὰ μὴν οὐδὲ ἀγένητον* 434 b 4 sq. Where we are perplexed, so as a rule were they, and we look to them in vain to solve the riddle of such passages as 403 b 2, 407 a 11, 407 b 28 sq., 408 a 25 sq., 411 b 25, 412 a 17, 425 b 1, 2, 426 a 27, 427 a 10, 13, 14, 428 b 19 sq., 428 b 30—429 a 2, 430 b 14 sqq., 26 sqq., 433 b 17, 18, 434 a 12—15.

[1] Epicharmus apud Plut., *De Sollertia animalium*, 961 A.

ΠΕΡΙ ΨΥΧΗΣ.

EXPLICANTUR SIGLA

QUIBUS IN APPARATU CRITICO USI SUMUS.

E, codex Parisiensis 1853.
L, „ Vaticanus 253.
P, „ Vaticanus 1339, ex ed. H. Rabe.
S, „ Laurentianus 81.
T, „ Vaticanus 256.
U, „ Vaticanus 260.
V, „ Vaticanus 266.
W, „ Vaticanus 1026.
X, „ Ambrosianus H 50.
y, „ Parisiensis 2034.
m, „ Parisiensis 1921.
Ald., editio Aldina.
Basil., „ Basileensis tertia.
Sylb., „ Sylburgiana.
Bek., „ Bekkeri Academica.
Trend., „ Trendelenburgii.
Torst., „ Torstrikii.
Bus., „ Bussemakeri (Didotiana).
Bhl., „ Biehlii.
Rr., „ Rodieri.
Bon., Bonitz.
Alex., Alexander Aphrodisiensis.
Them., Themistius.
Simpl., Simplicius.
Philop., Philoponus.
Soph., Sophonias.
Prisc. Lyd., Priscianus Lydus.

vet. trans., vetusta translatio latina ex editione Juntina, Venet. 1550, et Thomae Aquinatis op. tom. XX., ed. Parmae 1866.

BJ., Jahresbericht üb. die Fortschr. etc. herausg. v. C. Bursian etc.

ΠΕΡΙ ΨΥΧΗΣ.

ΠΕΡΙ ΨΥΧΗΣ Α.

1 Τῶν καλῶν καὶ τιμίων τὴν εἴδησιν ὑπολαμβάνοντες, μᾶλ- 402a
λον δ' ἑτέραν ἑτέρας ἢ κατ' ἀκρίβειαν ἢ τῷ βελτιόνων τε
καὶ θαυμασιωτέρων εἶναι, δι' ἀμφότερα ταῦτα τὴν περὶ τῆς ψυ-
χῆς ἱστορίαν εὐλόγως ἂν ἐν πρώτοις τιθείημεν. δοκεῖ δὲ καὶ
πρὸς ἀλήθειαν ἅπασαν ἡ γνῶσις αὐτῆς μεγάλα συμβάλ- 5
λεσθαι, μάλιστα δὲ πρὸς τὴν φύσιν· ἔστι γὰρ οἷον ἀρχὴ
τῶν ζῴων. ἐπιζητοῦμεν δὲ θεωρῆσαι καὶ γνῶναι τήν τε φύ-
σιν αὐτῆς καὶ τὴν οὐσίαν, εἶθ' ὅσα συμβέβηκε περὶ αὐτήν·
ὧν τὰ μὲν ἴδια πάθη τῆς ψυχῆς εἶναι δοκεῖ, τὰ δὲ δι'
2 ἐκείνην καὶ τοῖς ζῴοις ὑπάρχειν. πάντῃ δὲ πάντως ἐστὶ τῶν 10
χαλεπωτάτων λαβεῖν τινὰ πίστιν περὶ αὐτῆς. καὶ γὰρ ὄν-
τος κοινοῦ τοῦ ζητήματος καὶ πολλοῖς ἑτέροις, λέγω δὲ τοῦ περὶ
τὴν οὐσίαν καὶ τὸ τί ἐστι, τάχ' ἄν τῳ δόξειε μία τις εἶναι
μέθοδος κατὰ πάντων περὶ ὧν βουλόμεθα γνῶναι τὴν οὐ-
σίαν, ὥσπερ καὶ τῶν κατὰ συμβεβηκὸς ἰδίων ἀπόδειξις, 15
ὥστε ζητητέον ἂν εἴη τὴν μέθοδον ταύτην. εἰ δὲ μή ἐστι μία
τις καὶ κοινὴ μέθοδος περὶ τὸ τί ἐστιν, ἔτι χαλεπώτερον
γίνεται τὸ πραγματευθῆναι· δεήσει γὰρ λαβεῖν περὶ ἕκα-
στον τίς ὁ τρόπος. ἐὰν δὲ φανερὸν ᾖ, πότερον ἀπόδειξίς τίς
ἐστιν ἢ διαίρεσις ἢ καί τις ἄλλη μέθοδος, ἔτι πολλὰς 20

Codices E S T U V W X y: libro secundo P, libro tertio L.

1. *μᾶλλον*...3. *εἶναι* Alexander Philopono teste spuria notabat || 2. *τε* om. E Torst., legerunt Philop. Soph. || 3. *ταῦτα* om. E Torst., leg. Philop. Soph. et, ut videtur, Them. 1, 18 || *περὶ* om. S T U W X Bek. Trend., add. Soph. Torst. || *τῆς* om. V y Soph. || 9. *κοινὰ* pro *δι' ἐκείνην* y, *τὰ δὲ κοινὰ καὶ τοῖς ζῴοις δι' ἐκείνην* U, receptum textum tuentur Them. Soph. || 10. *δὲ καὶ πάντως* S T U V W y, *πάντῃ δὲ πάντως* etiam Philop. || 12. *καὶ* om. E X Bek. Trend. Biehl Rodier || 13. *τὸ*] *τοῦ* S V W X Philop. Bek. Trend., *τὰ* T U || 15. *ἀπόδειξιν* S U W X Bek., *ἡ ἀπόδειξις* T, *ἀπόδειξις* etiam Soph. || 17. *καὶ κοινή τις* , U W X y || *τὸ*] *τοῦ* S T U W X || 19. post *τρόπος* virgulam Bek. || *ὅταν* S U W, *εἰ* V,

DE ANIMA. Book I.

Cognition is in our eyes a thing of beauty and worth, and this **1** is true of one cognition more than another, either because it is exact or because it relates to more important and remarkable objects. On both these grounds we may with good reason claim a high place for the enquiry concerning the soul. It would seem, too, that an acquaintance with the subject contributes greatly to the whole domain of truth and, more particularly, to the study of nature, the soul being virtually the principle of all animal life.

The subject of enquiry. Our aim is to discover and ascertain the nature and essence of soul and, in the next place, all the accidents belonging to it; of which some are thought to be attributes peculiar to the soul itself, while others, it is held, belong to the animal also, but owe their existence to the soul. But every- **2** where and in every way it is extremely difficult to arrive at any trustworthy conclusion on the subject. It is the same here as in many other enquiries. What we have to investigate is the essential nature of things and the What. It might therefore be thought that there is a single procedure applicable to all the objects whose essential nature we wish to discover, as demonstration is applicable to the properties which go along with them: in that case we should have to enquire what this procedure is. If, however, there is no single procedure common to all sciences for defining the What, our task becomes still more difficult, as it will then be necessary to settle in each particular case the method to be pursued. Further, even if it be evident that it consists in demonstration of some sort or division or some other procedure, there

ἐὰν etiam Simpl. p. 10, 4 || τις post ἀπόδειξις om. pr. E T U W X, etiam Philop. Biehl (in alt. ed.) || 20. post μέθοδος punctum Bek. || ἔτι δὲ πολλὰς T U V W Bek., δὲ om. etiam Soph.

ἀπορίας ἔχει καὶ πλάνας, ἐκ τίνων δεῖ ζητεῖν· ἄλλαι γὰρ
ἄλλων ἀρχαί, καθάπερ ἀριθμῶν καὶ ἐπιπέδων.
3 πρῶτον δ' ἴσως ἀναγκαῖον διελεῖν ἐν τίνι τῶν γενῶν καὶ τί
ἐστι, λέγω δὲ πότερον τόδε τι καὶ οὐσία ἢ ποιὸν ἢ ποσὸν ἤ καί τις
ἄλλη τῶν διαιρεθεισῶν κατηγοριῶν, ἔτι δὲ πότερον τῶν ἐν 25
δυνάμει ὄντων ἢ μᾶλλον ἐντελέχειά τις· διαφέρει γὰρ οὔ τι
4 σμικρόν. σκεπτέον δὲ καὶ εἰ μεριστὴ ἢ ἀμερής, καὶ πότερον 402b
ὁμοειδὴς ἅπασα ψυχὴ ἢ οὔ· εἰ δὲ μὴ ὁμοειδής, πότερον
εἴδει διαφέρουσιν ἢ γένει. νῦν μὲν γὰρ οἱ λέγοντες καὶ ζη-
τοῦντες περὶ ψυχῆς περὶ τῆς ἀνθρωπίνης μόνης ἐοίκασιν ἐπι-
5 σκοπεῖν. εὐλαβητέον δ' ὅπως μὴ λανθάνῃ πότερον εἷς ὁ λό- 5
γος αὐτῆς ἐστί, καθάπερ ζῴου, ἢ καθ' ἑκάστην ἕτερος, οἷον
ἵππου, κυνός, ἀνθρώπου, θεοῦ, τὸ δὲ ζῷον τὸ καθόλου ἤτοι οὐ-
θέν ἐστιν ἢ ὕστερον· ὁμοίως δὲ κἂν εἴ τι κοινὸν ἄλλο κατη-
6 γοροῖτο· ἔτι δ' εἰ μὴ πολλαὶ ψυχαὶ ἀλλὰ μόρια, πότερον δεῖ
ζητεῖν πρότερον τὴν ὅλην ψυχὴν ἢ τὰ μόρια. χαλεπὸν δὲ καὶ 10
τούτων διορίσαι ποῖα πέφυκεν ἕτερα ἀλλήλων, καὶ πότερον
τὰ μόρια χρὴ ζητεῖν πρότερον ἢ τὰ ἔργα αὐτῶν, οἷον τὸ
νοεῖν ἢ τὸν νοῦν καὶ τὸ αἰσθάνεσθαι ἢ τὸ αἰσθητικόν· ὁμοίως
7 δὲ καὶ ἐπὶ τῶν ἄλλων. εἰ δὲ τὰ ἔργα πρότερον, πάλιν ἄν
τις ἀπορήσειεν εἰ τὰ ἀντικείμενα πρότερα τούτων ζητητέον, οἷον 15
8 τὸ αἰσθητὸν τοῦ αἰσθητικοῦ καὶ τὸ νοητὸν τοῦ νοῦ. ἔοικε δ'
οὐ μόνον τὸ τί ἐστι γνῶναι χρήσιμον εἶναι πρὸς τὸ θεωρῆσαι
τὰς αἰτίας τῶν συμβεβηκότων ταῖς οὐσίαις, ὥσπερ ἐν τοῖς
μαθήμασι τί τὸ εὐθὺ καὶ καμπύλον ἢ τί γραμμὴ καὶ ἐπί-
πεδον πρὸς τὸ κατιδεῖν πόσαις ὀρθαῖς αἱ τοῦ τριγώνου γωνίαι 20
ἴσαι, ἀλλὰ καὶ ἀνάπαλιν τὰ συμβεβηκότα συμβάλλεται μέ-
γα μέρος πρὸς τὸ εἰδέναι τὸ τί ἐστιν· ἐπειδὰν γὰρ ἔχω-

26. *μᾶλλον*] *μόνον* E (Trend.), *μᾶλλον* tuentur Them. Philop. Simpl. Soph. || *τι* om S V W X y, legit Soph. || 402 b, 2. *ὁμοιοειδὴς* utrobique T U V W X, *ὁμοειδὴς* tuentur Them. Philop. Simpl. || 4. *μόνον* y Torst., *μόνης* corr. E et reliqui, etiam Them. Philop. 36, 7 Soph. || 6. *ἑκάστην* pr. E Torst., etiam Soph., *ἕτερον* V y, *ἕκαστον* reliqui ante Torstrikium omnes, etiam, ut videtur, Simpl. 13, 4 et Philop. in prooemio ad lib. II. 205, 20 || 7. *δὲ*] *γὰρ* V, Alex. *ἀπ. καὶ λύσ.* (ed. Bruns) p. 21, 15. 22, 2. 24, 4, etiam Soph. || 8. *κατηγορῆται* E, sed *η* in rasura (Trend.), *κατηγορεῖται* Torst., *κατηγοροῖτο* reliqui, etiam Simpl. Alex. 23, 19 || 11. *τοῦτο* V || *ἀλλήλων ἕτερα* X || 12. *δεῖ* U W X || 15. *πρότερον* T U V W X Philop. Soph. Bek. Trend. || 16. *νοῦ* E V X, in textum recepit Biehl (cf. 429 a, 17), *νοητοῦ* S, *νοητικοῦ* reliqui et scripti et impressi, etiam Philop., pro *αἰσθητικοῦ* et *νοητικοῦ* legi vult *αἰσθάνεσθαι* et *νοεῖν* Belger, Hermes, 1878, p. 302, at *αἰσθητικοῦ* etiam Philop. || 19. *καὶ τί τὸ κ.* S U W y, *καὶ τί κ.* T X || 22. *εἰδῆσαι* S T U W X y, *εἰδήσειν* V.

is still room for much perplexity and error, when we ask from what premisses our enquiry should start, for there are different premisses for different sciences; for the science of numbers, for example, and plane geometry.

The problems.

The first thing necessary is no doubt to determine under which 3 of the summa genera soul comes and what it is; I mean, whether it is a particular thing, i.e. substance, or is quality or is quantity, or falls under any other of the categories already determined. We must further ask whether it is amongst things potentially existent or is rather a sort of actuality, the distinction being all-important. Again, we must consider whether 4 it is divisible or indivisible; whether, again, all and every soul is homogeneous or not; and, if not, whether the difference between the various souls is a difference of species or a difference of genus: for at present discussions and investigations about soul would appear to be restricted to the human soul. We must take care not 5 to overlook the question whether there is a single definition of soul answering to a single definition of animal; or whether there is a different definition for each separate soul, as for horse and dog, man and god: animal, as the universal, being regarded either as non-existent or, if existent, as logically posterior. This is a question which might equally be raised in regard to any other common predicate. Further, on the assump- 6 tion that there are not several souls, but merely several different parts in the same soul, it is a question whether we should begin by investigating soul as a whole or its several parts. And here again it is difficult to determine which of these parts are really distinct from one another and whether the several parts, or their functions, should be investigated first. Thus, e.g. should the process of thinking come first or the mind that thinks, the process of sensation or the sensitive faculty? And so everywhere else. But, if the functions should come first, again 7 will arise the question whether we should first investigate the correlative objects. Shall we take, e.g., the sensible object before the faculty of sense and the intelligible object before the intellect?

Is there a single definition?

Questions of procedure.

A test of a good definition.

It would seem that not only is the knowledge of a thing's 8 essential nature useful for discovering the causes of its attributes, as, e.g., in mathematics the knowledge of what is meant by the terms straight or curved, line or surface, aids us in discovering to how many right angles the angles of a triangle are equal: but also, conversely, a knowledge of the attributes is a considerable aid to the knowledge of what a thing is.

μεν ἀποδιδόναι κατὰ τὴν φαντασίαν περὶ τῶν συμβεβηκό-
των, ἢ πάντων ἢ τῶν πλείστων, τότε καὶ περὶ τῆς οὐσίας
ἕξομέν τι λέγειν κάλλιστα· πάσης γὰρ ἀποδείξεως ἀρχὴ τὸ 25
τί ἐστιν, ὥστε καθ' ὅσους τῶν ὁρισμῶν μὴ συμβαίνει τὰ συμ-
βεβηκότα γνωρίζειν, ἀλλὰ μηδ' εἰκάσαι περὶ αὐτῶν εὐ- 403a
μαρές, δῆλον ὅτι διαλεκτικῶς εἴρηνται καὶ κενῶς ἅπαντες.

9 ἀπορίαν δ' ἔχει καὶ τὰ πάθη τῆς ψυχῆς, πότερόν ἐστι πάν-
τα κοινὰ καὶ τοῦ ἔχοντος ἢ ἐστί τι καὶ τῆς ψυχῆς ἴδιον αὐ-
τῆς· τοῦτο γὰρ λαβεῖν μὲν ἀναγκαῖον, οὐ ῥᾴδιον δέ. φαίνε- 5
ται δὲ τῶν μὲν πλείστων οὐθὲν ἄνευ τοῦ σώματος πάσχειν οὐδὲ
ποιεῖν, οἷον ὀργίζεσθαι, θαρρεῖν, ἐπιθυμεῖν, ὅλως αἰσθάνεσθαι.
μάλιστα δ' ἔοικεν ἴδιον τὸ νοεῖν· εἰ δ' ἐστὶ καὶ τοῦτο φαντασία
τις ἢ μὴ ἄνευ φαντασίας, οὐκ ἐνδέχοιτ' ἂν οὐδὲ τοῦτ' ἄνευ
10 σώματος εἶναι. εἰ μὲν οὖν ἐστί τι τῶν τῆς ψυχῆς ἔργων ἢ 10
παθημάτων ἴδιον, ἐνδέχοιτ' ἂν αὐτὴν χωρίζεσθαι· εἰ δὲ μη-
θέν ἐστιν ἴδιον αὐτῆς, οὐκ ἂν εἴη χωριστή, ἀλλὰ καθάπερ τῷ
εὐθεῖ, ᾗ εὐθύ, πολλὰ συμβαίνει, οἷον ἅπτεσθαι τῆς χαλ-
κῆς σφαίρας κατὰ στιγμήν, οὐ μέντοι γ' ἅψεται οὕτω χωρι-
σθὲν τὸ εὐθύ· ἀχώριστον γάρ, εἴπερ ἀεὶ μετὰ σώματός τι- 15
νός ἐστιν. ἔοικε δὲ καὶ τὰ τῆς ψυχῆς πάθη πάντα εἶναι με-
τὰ σώματος, θυμός, πραότης, φόβος, ἔλεος, θάρσος, ἔτι
χαρὰ καὶ τὸ φιλεῖν τε καὶ μισεῖν· ἅμα γὰρ τούτοις πά-
σχει τι τὸ σῶμα. σημεῖον δὲ τὸ ποτὲ μὲν ἰσχυρῶν καὶ ἐν-
αργῶν παθημάτων συμβαινόντων μηδὲν παροξύνεσθαι ἢ φο- 20
βεῖσθαι, ἐνίοτε δ' ὑπὸ μικρῶν καὶ ἀμαυρῶν κινεῖσθαι, ὅταν
ὀργᾷ τὸ σῶμα καὶ οὕτως ἔχῃ ὥσπερ ὅταν ὀργίζηται. ἔτι
δὲ τοῦτο μᾶλλον φανερόν· μηθενὸς γὰρ φοβεροῦ συμβαίνον-
τος ἐν τοῖς πάθεσι γίνονται τοῖς τοῦ φοβουμένου. εἰ δ' οὕτως
ἔχει, δῆλον ὅτι τὰ πάθη λόγοι ἔνυλοί εἰσιν. ὥστε οἱ ὅροι 25

25. τι λέγειν T U V, τι insert. E_2 Simpl. Soph. || ὅτι κάλλιστα T V X y, τι κάλλιον W, κάλλιστα etiam Simpl. Philop. || γὰρ tuentur praeter omnes codd. Philop. Alex. apud Philop. Simpl. || 403 a, 6. δὲ om. E || τῶν μὲν E X y Philop. Soph. Torst., μὲν om. reliqui ante Torst. omnes || ἄνευ τοῦ σώμ. E Philop. Soph. Torst., τοῦ om. reliqui ante Torst. omnes || 8. ἰδίῳ S W X y, Simpl. Philop. Trend. ed. pr., ἴδιον etiam E, sed ον in ras., ω superscr. (Bhl.), ἴδιον etiam Them. Soph. || 9. ἄνευ τοῦ σώμ. W y et, ut videtur, Philop. 46, 5, τοῦ om. etiam Them. Simpl. Soph. || 13. ᾗ εὐθεῖ W et E_2, ᾗ εὐθύ E_1 (Stapf.) || 14. οὕτω solus E et Bonitz (Hermes VII, 417), reliqui ante Biehlium omnes τούτου, etiam Philop. Simpl. et, ut videtur, Soph. 7, 28 || 18. καὶ τὸ μισεῖν S W X || γὰρ et 19. τι om. E, leg. Soph. || ἅμα...19. σῶμα unc. incl. Torst., tuentur haec verba praeter codd. Simpl. Philop.,

For when we are able to give an account of all, or at any rate most, of the attributes as they are presented to us, then we shall be in a position to define most exactly the essential nature of the thing. In fact, the starting point of every demonstration is a definition of what something is. Hence the definitions which lead to no information about attributes and do not facilitate even conjecture respecting them have clearly been framed for dialectic and are void of content, one and all.

Soul and body.

A further difficulty arises as to whether all attributes of the soul are also shared by that which contains the soul or whether any of them are peculiar to the soul itself: a question which it is indispensable, and yet by no means easy, to decide. It would appear that in most cases soul neither acts nor is acted upon apart from the body: as, e.g., in anger, confidence, desire and sensation in general. Thought, if anything, would seem to be peculiar to the soul. Yet, if thought is a sort of imagination, or not independent of imagination, it will follow that even thought cannot be independent of the body. If, then, there be any of the functions or affections of the soul peculiar to it, it will be possible for the soul to be separated from the body: if, on the other hand, there is nothing of the sort peculiar to it, the soul will not be capable of separate existence. As with the straight line, so with it. The line, *quâ* straight, has many properties; for instance, it touches the brazen sphere at a point; but it by no means follows that it will so touch it if separated. In fact it is inseparable, since it is always conjoined with body of some sort. So, too, the attributes of the soul appear to be all conjoined with body: such attributes, viz., as anger, mildness, fear, pity, courage; also joy, love and hate; all of which are attended by some particular affection of the body. This indeed is shown by the fact that sometimes violent and palpable incentives occur without producing in us exasperation or fear, while at other times we are moved by slight and scarcely perceptible causes, when the blood is up and the bodily condition that of anger. Still more is this evident from the fact that sometimes even without the occurrence of anything terrible men exhibit all the symptoms of terror. If this be so, the attributes are evidently forms or notions realised in matter.

e.g. 50, 22, Soph. || 19. *σημεῖον* E Torst., *μηνύει* reliqui ante Torst. omnes, etiam Them. Soph. || *μὲν ὑπὸ ἰσχ.* T U V W X Soph. || 21. *δ'*] *δὲ καὶ* U V W y, om. *καὶ* etiam Them. Soph. || *ἐὰν* S T V W X Soph., *ὅταν* etiam Simpl. || 23. *μᾶλλον τοῦτο* S T V W X y, *τούτου μᾶλλον* coni. Torst., *τούτῳ* coni. Christ || 25. *ὅτι καὶ τὰ* U V y || *ἐν ὕλῃ* E T, *ἔνυλοι* etiam Them. Philop. Soph.

τοιοῦτοι οἷον τὸ ὀργίζεσθαι κίνησίς τις τοῦ τοιουδὶ σώματος ἢ
11 μέρους ἢ δυνάμεως ὑπὸ τοῦδε ἕνεκα τοῦδε. καὶ διὰ ταῦτα ἤδη
φυσικοῦ τὸ θεωρῆσαι περὶ ψυχῆς, ἢ πάσης ἢ τῆς τοιαύτης.
διαφερόντως δ' ἂν ὁρίσαιντο φυσικός τε καὶ διαλεκτικὸς
ἕκαστον αὐτῶν, οἷον ὀργὴ τί ἐστιν· ὁ μὲν γὰρ ὄρεξιν ἀντιλυ- 30
πήσεως ἤ τι τοιοῦτον, ὁ δὲ ζέσιν τοῦ περὶ καρδίαν αἵματος
ἢ θερμοῦ. τούτων δὲ ὁ μὲν τὴν ὕλην ἀποδίδωσιν, ὁ δὲ τὸ 403b
εἶδος καὶ τὸν λόγον. ὁ μὲν γὰρ λόγος εἶδος τοῦ πράγματος,
ἀνάγκη δ' εἶναι τοῦτον ἐν ὕλῃ τοιᾳδί, εἰ ἔσται· ὥσπερ οἰκίας
ὁ μὲν λόγος τοιοῦτος, ὅτι σκέπασμα κωλυτικὸν φθορᾶς ὑπ'
ἀνέμων καὶ ὄμβρων καὶ καυμάτων, ὁ δὲ φήσει λίθους καὶ 5
πλίνθους καὶ ξύλα, ἕτερος δ' ἐν τούτοις τὸ εἶδος ἕνεκα τωνδί.
τίς οὖν ὁ φυσικὸς τούτων; πότερον ὁ περὶ τὴν ὕλην, τὸν δὲ
λόγον ἀγνοῶν, ἢ ὁ περὶ τὸν λόγον μόνον; ἢ μᾶλλον ὁ ἐξ
ἀμφοῖν. ἐκείνων δὲ δὴ τίς ἑκάτερος; ἢ οὐκ ἔστι τις ὁ περὶ
τὰ πάθη τῆς ὕλης τὰ μὴ χωριστὰ μηδ' ᾗ χωριστά, ἀλλ' 10
ὁ φυσικὸς περὶ ἅπανθ' ὅσα τοῦ τοιουδὶ σώματος καὶ τῆς τοι-
αύτης ὕλης ἔργα καὶ πάθη· ὅσα δὲ μὴ ᾗ τοιαῦτα, ἄλ-
λος, καὶ περὶ τινῶν μὲν τεχνίτης, ἐὰν τύχῃ, οἷον τέκτων ἢ
ἰατρός, τῶν δὲ μὴ χωριστῶν μέν, ᾗ δὲ μὴ τοιούτου σώμα-
τος πάθη καὶ ἐξ ἀφαιρέσεως, ὁ μαθηματικός, ᾗ δὲ κεχωρι- 15
σμένα, ὁ πρῶτος φιλόσοφος. ἀλλ' ἐπανιτέον ὅθεν ὁ λόγος.
ἐλέγομεν δ' ὅτι τὰ πάθη τῆς ψυχῆς ἀχώριστα τῆς φυσικῆς
ὕλης τῶν ζῴων, ᾗ δὴ τοιαῦθ' ὑπάρχει, θυμὸς καὶ φόβος,
καὶ οὐχ ὥσπερ γραμμὴ καὶ ἐπίπεδον.

26. κίνησιν E: κίνησις etiam Simpl. Philop. Soph. Cf. ad 403 a. 15 | τις om. E S Soph., τις leg. etiam Simpl. Philop. | 27. ἤδη] δὴ S T V W y, om. X | 29. ὁρίσαιντο φ. V, ὁρίσαιτο ὁ φ. S T U W X y Soph. | καὶ ὁ διαλεκτικὸς W y, ὁ om. etiam Soph. | 31. τοιοῦτο S T U V W, τοιοῦτον etiam Soph. | verba αἵματος καὶ (vel ἢ) removenda esse censet Steinhart, Symb. Crit. 1843 | 403 b. 1. ἢ] καὶ E Bek. Torst., ἢ etiam Philop. Soph. Trend. | 2. εἶδος τοῦ] εἶδος mihi suspectum, ὅδε τοῦ W et, ut videtur, Soph. 8, 33, fortasse recte, ὁ δὲ τοῦ E S T V y Simpl. Philop. Plutarchus ap. Simpl. 21, 33 | 3. εἶναι τοιοῦτον V, τοῦτον εἶναι W | ἐπὶ οἰκίας W y | 4. ὅτι] τις S, τις ὅτι X, ἂν εἴη T W, ἂν εἴη ὅτι U V | 5. καυμάτων καὶ ὄμβρων W X, ὄμβρων καὶ πνευμάτων E, textum tuentur etiam Them. Philop. Soph. | φησι S V X y | καὶ πλ.] καὶ om. V | 6. ἐν om. W | 9. post ἀμφοῖν interrogandi signum Bek., correxit Trend. | δὴ om. U V | 10. post μὴ χωριστὰ virgulam Bek. et Trend., sustulit Torst. | 11. πάνθ' T, ἅπανθ' etiam E, sed α eras. (Stapf.) | τοῦ om. S U W | τοιουδὶ] φυσικοῦ T | 12. ὅσα E Philop. Torst., reliqui ante Torst. omnes ὁπόσα | ἦν E, sed ν expunct. (Stapf.), ᾗ Simpl. Bon. (Metaph. p. 284) Torst., omisisse videtur Philop. in interpr. 62, 16, reliqui ante Torst. omnes ἢ | 13. τινος T, τινα U W y, τινῶν etiam Simpl. Philop. Soph. | 15. ὁ om. E, leg. etiam Soph. ||

Hence they must be defined accordingly: anger, for instance, as a certain movement in a body of a given kind, or some part or faculty of it, produced by such and such a cause and for such and such an end. These facts at once bring the investigation of soul, 11 whether in its entirety or in the particular aspect described, within the province of the natural philosopher.

Digression.

But every such attribute would be differently defined by the physicist and the dialectician or philosopher. Anger, for instance, would be defined by the dialectician as desire for retaliation or the like, by the physicist as a ferment of the blood or heat which is about the heart: the one of them gives the matter, the other the form or notion. For the notion is the form of the thing, but this notion, if it is to be, must be realised in matter of a particular kind; just as in the case of a house. The notion or definition of a house would be as follows: a shelter to protect us from harm by wind or rain or scorching heat; while another will describe it as stones, bricks and timber; and again another as the form realised in these materials and subserving given ends. Which then of these is the true physicist? Is it he who confines himself to the matter, while ignoring the form? Or he who treats of the form exclusively? I answer, it is rather he who in his definition takes account of both. What then of each of the other two? Or shall we rather say that there is no one who deals with properties which are not separable nor yet treated as separable, but the physicist deals with all the active properties or passive affections belonging to body of a given sort and the corresponding matter? All attributes not regarded as so belonging he leaves to someone else: who in certain cases is an expert, a carpenter, for instance, or a physician. The attributes which, though inseparable, are not regarded as properties of body of a given sort, but are reached by abstraction, fall within the province of the mathematician: while attributes which are regarded as having separate existence fall to the first philosopher or metaphysician. But to return to the point of digression. We were saying that the attributes of the soul are as such,—I mean, as anger and fear, inseparable from the physical matter of the animals to which they belong, and not, like line and surface, separable in thought.

Conclusion.

17. *οὔτε ὡς χωριστὰ* ex solo E Biehl Rodier, quasi 19. *καὶ οὐχ* huic *οὔτε* respondeat, sed aut <*οὔτε χωριστὰ*> *οὔτε* aut *οὐδὲ* pro *οὔτε* minus incommodi haberet, *χωριστὰ* T V X, *οὐ χωριστὰ* Soph. Torst. Dembowski, Woch. f. class. Phil. 1887, p. 430, reliqui *ἀχώριστα*, etiam Them. Philop. Simpl. ‖ 18. *ᾗ δὴ*] *ᾗ γε* U Simpl., *εἴ γε* T, *ἡ* X, *ᾗ δὴ* etiam Philop. Soph. ‖ *τοιαύτη* X.

2 Ἐπισκοποῦντας δὲ περὶ ψυχῆς ἀναγκαῖον ἅμα διαπο- 20
ροῦντας περὶ ὧν εὐπορεῖν δεῖ προελθόντας, τὰς τῶν προτέρων
δόξας συμπαραλαμβάνειν ὅσοι τι περὶ αὐτῆς ἀπεφήναντο,
ὅπως τὰ μὲν καλῶς εἰρημένα λάβωμεν, εἰ δέ τι μὴ κα-
2 λῶς, τοῦτ' εὐλαβηθῶμεν. ἀρχὴ δὲ τῆς ζητήσεως προθέσθαι
τὰ μάλιστα δοκοῦνθ' ὑπάρχειν αὐτῇ κατὰ φύσιν. τὸ ἔμψυ- 25
χον δὴ τοῦ ἀψύχου δυοῖν μάλιστα διαφέρειν δοκεῖ, κινήσει
τε καὶ τῷ αἰσθάνεσθαι. παρειλήφαμεν δὲ καὶ παρὰ τῶν προ-
γενεστέρων σχεδὸν δύο ταῦτα περὶ ψυχῆς· φασὶ γὰρ ἔνιοι
καὶ μάλιστα καὶ πρώτως ψυχὴν εἶναι τὸ κινοῦν. οἰηθέντες δὲ
τὸ μὴ κινούμενον αὐτὸ μὴ ἐνδέχεσθαι κινεῖν ἕτερον, τῶν 30
3 κινουμένων τι τὴν ψυχὴν ὑπέλαβον εἶναι. ὅθεν Δημόκριτος μὲν
πῦρ τι καὶ θερμόν φησιν αὐτὴν εἶναι· ἀπείρων γὰρ ὄντων 404a
σχημάτων καὶ ἀτόμων τὰ σφαιροειδῆ πῦρ καὶ ψυχὴν λέ-
γει, οἷον ἐν τῷ ἀέρι τὰ καλούμενα ξύσματα, ἃ φαίνεται ἐν
ταῖς διὰ τῶν θυρίδων ἀκτῖσιν, ὧν τὴν μὲν πανσπερμίαν
τῆς ὅλης φύσεως στοιχεῖα λέγει· ὁμοίως δὲ καὶ Λεύκιππος· τού- 5
των δὲ τὰ σφαιροειδῆ ψυχήν, διὰ τὸ μάλιστα διὰ παντὸς δύ-
νασθαι διαδύνειν τοὺς τοιούτους ῥυσμοὺς καὶ κινεῖν τὰ λοιπὰ
κινούμενα καὶ αὐτά, ὑπολαμβάνοντες τὴν ψυχὴν εἶναι τὸ
παρέχον τοῖς ζῴοις τὴν κίνησιν. διὸ καὶ τοῦ ζῆν ὅρον εἶναι
τὴν ἀναπνοήν· συνάγοντος γὰρ τοῦ περιέχοντος τὰ σώματα 10
καὶ ἐκθλίβοντος τῶν σχημάτων τὰ παρέχοντα τοῖς ζῴοις
τὴν κίνησιν διὰ τὸ μηδ' αὐτὰ ἠρεμεῖν μηδέποτε, βοήθειαν
γίγνεσθαι θύραθεν ἐπεισιόντων ἄλλων τοιούτων ἐν τῷ ἀναπνεῖν·
κωλύειν γὰρ αὐτὰ καὶ τὰ ἐνυπάρχοντα ἐν τοῖς ζῴοις ἐκ-
κρίνεσθαι, συνανείργοντα τὸ συνάγον καὶ πηγνύον· καὶ ζῆν 15
4 δὲ ἕως ἂν δύνωνται τοῦτο ποιεῖν. ἔοικε δὲ καὶ τὸ παρὰ τῶν
Πυθαγορείων λεγόμενον τὴν αὐτὴν ἔχειν διάνοιαν· ἔφασαν
γάρ τινες αὐτῶν ψυχὴν εἶναι τὰ ἐν τῷ ἀέρι ξύσματα, οἱ

20. *δὲ πάλιν περὶ* S || 21. *προδιελθόντας* S Philop. Soph., *διελθόντας* X et pr. T, ante *προελθόντας* virgulam ponunt Bek. Trend. || 22. *συμπεριλαμβάνειν* T W X, *διαλαμβάνειν* V, *συμπαραλαμβάνειν* etiam Them. Philop. Soph. || 23. *καλῶς* om. T, post *εἰρημένα* ponit U || *μήτι* U V || 24. *τοῦτ' ἀληθῆ θῶμεν* S || 26. *δυεῖν* E, *δυσὶ* S V W X || *μάλιστα* ante *δυσὶ* W || *δοκεῖ διαφέρειν* X || 28. *φασὶ*] *φασὶ μὲν* V || *ἔνιοι γὰρ* W || 29. *πρῶτον* E T, *πρώτως* etiam Philop. Simpl. Soph. || 30. *μηδ' ἐνδ.* V y || 31. *ψυχὴν οὕτως ὑπ.* U y || *Δημ. μὲν*] *καὶ Δημ.* V || 404 a, 1. *αὐτὴν φησιν* T W || 2. *τὰ σφαιρ.... λέγει* et 4. *ὧν* delenda et 5. *ὁμοίως... Λεύκιππος* parenth. includenda censet Madvig, adversaria critica I, p. 471, probat Rodier II, p. 45, *τὰ σφαιρ.... 4. ὧν* ut antiquam glossam delevit Diels, Fragmente

2 In our enquiry concerning soul it is necessary to state the problems which must be solved as we proceed, and at the same time to collect the views of our predecessors who had anything to say on the subject, in order that we may adopt what is right in their conclusions and guard against their mistakes.

The current theories.

2 Our enquiry will begin by presenting what are commonly held to be in a special degree the natural attributes of soul. Now there are two points especially wherein that which is animate is held to differ from the inanimate, namely, motion and the act of sensation: and these are approximately the two characteristics of soul handed down to us by our predecessors. There are some who maintain that soul is preeminently and primarily the cause of movement. But they imagined that that which is not itself in motion cannot move anything else, and thus they regarded the soul as a thing which is in motion.

Soul moved because movent.

3 Hence Democritus affirms the soul to be a sort of fire or heat. For the "shapes" or atoms are infinite and those which are spherical he declares to be fire and soul: they may be compared with the so-called motes in the air, which are seen in the sunbeams that enter through our windows. The aggregate of such seeds, he tells us, forms the constituent elements of the whole of nature (and herein he agrees with Leucippus), while those of them which are spherical form the soul, because such figures most easily find their way through everything and, being themselves in motion, set other things in motion. The atomists assume that it is the soul which imparts motion to animals. It is for this reason that they make life depend upon respiration. For, when the surrounding air presses upon bodies and tends to extrude those atomic shapes which, because they are never at rest themselves, impart motion to animals, then they are reinforced from outside by the entry of other like atoms in respiration, which in fact, by helping to check compression and solidification, prevent the escape of the atoms already contained in the animals; and life, so they hold, continues so long as there is strength to do this.

The atomists.

4 The doctrine of the Pythagoreans seems also to contain the same thought. Some of them identified soul with the motes in the air, others with that which sets these motes

Certain Pythagoreans.

der Vorsokratiker, p. 363, 7 || 4. *τὴν μὲν πανσπ.* E (Trend.), Them. Torst., *μὲν* om. reliqui ante Torst. omnes, etiam Philop. Soph. || 5. *στοιχεῖα λέγει τῆς ὅλης φύσεως* excepto E omnes codd., etiam Them. Soph. Bek. Trend. || 6. *σφαιρ. πῦρ καὶ ψυχὴν* V || 9. *διὸ*... 12. *κίνησιν* om. V || 10. *τὴν εἰσπνοὴν καὶ τὴν ἀναπνοὴν* S. || 13. *οὐρανόθεν* T || *εἶτ' εἰσιόντων* E, *ἐπεισιόντων* etiam Them. Soph. et sine dubio Philop. et Simpl.

[illegible] 5

[illegible] 404b

[illegible] 10

[illegible] 15

[illegible] legit [illegible]
[illegible] verba [illegible]
[illegible] virgulam post
[illegible] Soph.
[illegible] virgulam post
[illegible] colon
[illegible] Biehl, reliqui
[illegible] E. πολλαχῶς W,
[illegible] om. V y. legit
[illegible] ψυχῇ T W et,
[illegible] et μικροῖς

in motion: and as to these motes it has been stated that they are seen to be in incessant motion, even though there be a perfect calm. The view of others who describe the soul as that which moves itself tends in the same direction. For it would seem that all these thinkers regard motion as the most distinctive characteristic of the soul. Everything else, they think, is moved by the soul, but the soul is moved by itself: and this because they never see anything cause motion without itself being in motion. Similarly the soul is said to 5 be the moving principle by Anaxagoras and all others who have held that mind sets the universe in motion; but not altogether in the same sense as by Democritus. The latter, indeed, absolutely identified soul and mind, holding that the presentation to the senses is the truth: hence, he observed, Homer had well sung of Hector in his swoon that he lay 'with other thoughts.' Democritus, then, does not use the term mind to denote a faculty conversant with truth, but regards mind as identical with soul. Anaxagoras, however, is less exact in his use of the terms. In many places he speaks of mind as the cause of goodness and order, but elsewhere he identifies it with the soul: as where he attributes it to all animals, both great and small, high and low. As a matter of fact, however, mind in the sense of intelligence would not seem to be present in all animals alike, nor even in all men.

Anaxagoras.

His view ambiguous.

6 Those, then, who have directed their attention to the motion of the animate being, conceived the soul as that which is most capable of causing motion: while those who laid stress on its knowledge and perception of all that exists identified the soul with the ultimate principles, whether they recognised a plurality of these or only one. Thus Empedocles compounded soul out of all the elements, while at the same time regarding each one of them as a soul. His words are "With earth we see earth, with water water, with air bright air, but ravaging fire by fire, love by love, and strife by

Soul, as cognitive, derived from the elements.

Empedocles.

sustulit Diels || ἀτιμοτέροις E (Stapf.) || 5. φαίνεται νῦν δὲ E (νῦν in rasura, Trend.) || 6. πᾶσιν om. S T W X || 9. τὸ post καὶ om. S T V W y, leg. etiam Them. Soph. || δὴ U Them., om. V W || 10. ποιοῦντες ταύτας οἱ V W et vet. transl. Biehl Rodier, ποιοῦντες αὐτὰς οἱ in lemmate Philop. 72, 31 et in interpr. οἱ μὲν πλείους εἰπόντες ἀρχὰς 73, 13, ποιοῦντες τὰς ἀρχὰς οἱ T U, et Philop. v. l. 72, 31, ποιοῦντες τὰς ἀρχὰς ταύτας οἱ S X y et in interpr. Them. Soph., ποιοῦντες, οἱ E Bek. Trend. Torst. ταύτας unc. includere malui, delendum censet etiam Dembowski, p. 431, om. Diels, p. 213, Fr. 109 || ante ταύτας et 11. ταύτην virgulas posuit Rodier || 11. μὲν om. S T W || 12. οὕτως E (Trend.), οὕτω λέγων S U, om. T W, vulgo ante Biehlium οὕτω || 13. δ' insertum E, leg. etiam Them. Soph. || 14. ἴδιον T U V W, etiam Soph.

7 τὸν αὐτὸν δὲ τρόπον καὶ ὁ Πλάτων ἐν τῷ Τιμαίῳ τὴν ψυ-
χὴν ἐκ τῶν στοιχείων ποιεῖ· γινώσκεσθαι γὰρ τῷ ὁμοίῳ τὸ
ὅμοιον, τὰ δὲ πράγματα ἐκ τῶν ἀρχῶν εἶναι. ὁμοίως δὲ
καὶ ἐν τοῖς περὶ φιλοσοφίας λεγομένοις διωρίσθη, αὐτὸ μὲν
τὸ ζῷον ἐξ αὐτῆς τῆς τοῦ ἑνὸς ἰδέας καὶ τοῦ πρώτου μήκους 20
καὶ πλάτους καὶ βάθους, τὰ δ' ἄλλα ὁμοιοτρόπως. ἔτι δὲ
καὶ ἄλλως, νοῦν μὲν τὸ ἕν, ἐπιστήμην δὲ τὰ δύο· μοναχῶς
γὰρ ἐφ' ἕν· τὸν δὲ τοῦ ἐπιπέδου ἀριθμὸν δόξαν, αἴσθησιν δὲ
τὸν τοῦ στερεοῦ· οἱ μὲν γὰρ ἀριθμοὶ τὰ εἴδη αὐτὰ καὶ αἱ ἀρ-
χαὶ ἐλέγοντο, εἰσὶ δ' ἐκ τῶν στοιχείων. κρίνεται δὲ τὰ πρά- 25
γματα τὰ μὲν νῷ, τὰ δ' ἐπιστήμῃ, τὰ δὲ δόξῃ, τὰ δ' αἰ-
8 σθήσει· εἴδη δ' οἱ ἀριθμοὶ οὗτοι τῶν πραγμάτων. ἐπεὶ δὲ καὶ
κινητικὸν ἐδόκει ἡ ψυχὴ εἶναι καὶ γνωριστικὸν οὕτως, ἔνιοι
συνέπλεξαν ἐξ ἀμφοῖν, ἀποφηνάμενοι τὴν ψυχὴν ἀριθμὸν
9 κινοῦνθ' ἑαυτόν. διαφέρονται δὲ περὶ τῶν ἀρχῶν, τίνες καὶ 30
πόσαι, μάλιστα μὲν οἱ σωματικὰς ποιοῦντες τοῖς ἀσωμάτους,
τούτοις δ' οἱ μείξαντες καὶ ἀπ' ἀμφοῖν τὰς ἀρχὰς ἀποφη- 405a
10 νάμενοι. διαφέρονται δὲ καὶ περὶ τὸ πλῆθος· οἱ μὲν γὰρ
μίαν οἱ δὲ πλείους λέγουσιν. ἑπομένως δὲ τούτοις καὶ τὴν
ψυχὴν ἀποδιδόασιν· τό τε γὰρ κινητικὸν τὴν φύσιν τῶν πρώ-
11 των ὑπειλήφασιν, οὐκ ἀλόγως. ὅθεν ἔδοξέ τισι πῦρ εἶναι· 5
καὶ γὰρ τοῦτο λεπτομερέστατόν τε καὶ μάλιστα τῶν στοιχείων
ἀσώματον, ἔτι δὲ κινεῖταί τε καὶ κινεῖ τὰ ἄλλα πρώτως.
12 Δημόκριτος δὲ καὶ γλαφυρωτέρως εἴρηκεν ἀποφαινόμενος
διὰ τί τούτων ἑκάτερον· ψυχὴν μὲν γὰρ εἶναι ταὐτὸ καὶ νοῦν,
τοῦτο δ' εἶναι τῶν πρώτων καὶ ἀδιαιρέτων σωμάτων, κινητι- 10
κὸν δὲ διὰ λεπτομέρειαν καὶ τὸ σχῆμα· τῶν δὲ σχημάτων

16. *καὶ ὁ* E, "et Plato" vet. transl., om. S T U V W y, *ὁ* om. Bek. Trend. Torst. || *Πλάτων* post *Τιμαίῳ* U W y, post *ψυχὴν* S T || 21. *τὰς δ' ἄλλας* Them. et tanquam variam lectionem Philop. commemorat 79, 15, *τὰ δὲ ἄλλα* Simpl., *τἄλλα δὲ* Soph. || 23. *ἐφ' ἕν*] *γίνεται* X, om. S T, leg. etiam Them. Soph. || 24. *αὐτὰ* om. S X, leg. Soph. || *αἱ* ante *ἀρχαὶ* ex uno E addunt Bek. et Torst., om. Soph. Trend. || 27. *εἴδη δὲ καὶ ἀριθμοὶ* coni. Steinhart, *οὗτοι καὶ* coni. Susemihl, Jen. Lit. Z. 1877, p. 708 || 28. virgulam post *οὕτως* Torst. Belger in ed. alt. Trend. Rodier, etiam Soph. 14, 2, ante *οὕτως* reliqui, etiam Simpl. Philop. || 30. *διαφέρονται*...405 b, 29. *ψυχήν* non satis ad praecedentia quadrare videntur Susemihlio, Oecon. p. 84 || 31. *τὰς ἀσωμάτους* e codd. solus X, *τοῖς ἀσωμάτους* Them. Philop. Soph. Trend. Torst., ceteri codd. et Bek. *τοῖς ἀσωμάτοις* || 405 a, 2. *τοῦ πλήθους* S T V X || 4. *τε* om. S T || 7. *ἔτι δὲ* E_1, sed eras., in ras. *καί*, *καὶ* etiam V X, *ἔτι δὲ καὶ* S T W || *τε* om. S T W || 8. *ἀποφαινόμενος* Torst. ex E, reliqui ante Torst. omnes *ἀποφηνάμενος*, etiam Soph. || 9. *ψυχὴ* E (Trend.) || *ταὐτὸν* S T V X || 10. *εἶναι ἐκ τῶν* T U V W X || 11. *λεπτομέρειαν* T et nunc E, sed *λεπτο* in ras. (Stapf.), "subtilitatem"

gruesome strife." In the same manner Plato in the *Timaeus* con- 7 structs the soul out of the elements. Like, he there maintains, is known by like, and the things we know are composed of the ultimate principles. In like manner it was explained in the lectures on philosophy, that the self-animal or universe is made up of the idea of One, and of the idea-numbers Two, or primary length, Three, primary breadth, and Four, primary depth, and similarly with all the rest of the ideas. And again this has been put in another way as follows: reason is the One, knowledge is the Two, because it proceeds by a single road to one conclusion, opinion is the number of a surface, Three, and sensation the number of a solid, Four. In fact, according to them the numbers, though they are the ideas themselves, or the ultimate principles, are nevertheless derived from elements. And things are judged, some by reason, others by knowledge, others again by opinion and others by sensation: while these idea-numbers are forms of things. And since the soul was held to be thus 8 cognitive as well as capable of causing motion, some thinkers have combined the two and defined the soul as a self-moving number.

Plato.

The self-moving number.

But there are differences of opinion as to the nature and number of 9 the ultimate principles, especially between those thinkers who make the principles corporeal and those who make them incorporeal; and again between both of these and others who combine the two and take their principles from both. But, further, they differ also as to their 10 number: some assuming a single principle, some a plurality. And, when they come to give an account of the soul, they do so in strict accordance with their several views. For they have assumed, not unnaturally, that the soul is that primary cause which in its own nature is capable of producing motion. And this is why some 11 identified soul with fire, this being the element which is made up of the finest particles and is most nearly incorporeal, while further it is preeminently an element which both moves and sets other things in motion. Democritus has expressed more neatly the reason for 12 each of these facts. Soul he regards as identical with mind, and this he makes to consist of the primary indivisible bodies and considers it to be a cause of motion from the fineness of its particles and their shape. Now the shape which is most susceptible of

Various theories of elements: corresponding theories of soul.

vet. transl. Torst., cui assentitur etiam Noetel, Zeitschr. f. Gym. 1864, p. 141, *μικρολεπτομέρειαν* S, *μικρομέρειαν* rc. E et reliqui codd. Diels, p. 386, 33, quod rasurae subfuisse coni. Stapfer, Studia, p. 13, etiam Philop. Soph., *σμικρομέρειαν* Them.

εὐκινητότατον τὸ σφαιροειδὲς λέγει· τοιοῦτον δ' εἶναι τόν τε
13 νοῦν καὶ τὸ πῦρ. Ἀναξαγόρας δ' ἔοικε μὲν ἕτερον λέγειν ψυ-
χήν τε καὶ νοῦν, ὥσπερ εἴπομεν καὶ πρότερον, χρῆται δ'
ἀμφοῖν ὡς μιᾷ φύσει, πλὴν ἀρχήν γε τὸν νοῦν τίθεται μά- 15
λιστα πάντων· μόνον γοῦν φησὶν αὐτὸν τῶν ὄντων ἁπλοῦν εἶναι
καὶ ἀμιγῆ τε καὶ καθαρόν. ἀποδίδωσι δ' ἄμφω τῇ αὐτῇ
ἀρχῇ, τό τε γινώσκειν καὶ τὸ κινεῖν, λέγων νοῦν κινῆσαι τὸ
14 πᾶν. ἔοικε δὲ καὶ Θαλῆς, ἐξ ὧν ἀπομνημονεύουσι, κινητικόν
τι τὴν ψυχὴν ὑπολαβεῖν, εἴπερ τὸν λίθον ἔφη ψυχὴν ἔχειν, 20
15 ὅτι τὸν σίδηρον κινεῖ. Διογένης δ' ὥσπερ καὶ ἕτεροί τινες
ἀέρα, τοῦτον οἰηθεὶς πάντων λεπτομερέστατον εἶναι καὶ ἀρχήν·
καὶ διὰ τοῦτο γινώσκειν τε καὶ κινεῖν τὴν ψυχήν, ᾗ μὲν πρῶ-
τόν ἐστι, καὶ ἐκ τούτου τὰ λοιπά, γινώσκειν, ᾗ δὲ λεπτότατον,
16 κινητικὸν εἶναι. καὶ Ἡράκλειτος δὲ τὴν ἀρχὴν εἶναί φησι 25
ψυχήν, εἴπερ τὴν ἀναθυμίασιν, ἐξ ἧς τἆλλα συνίστησιν· καὶ
ἀσωματώτατόν τε καὶ ῥέον ἀεί· τὸ δὲ κινούμενον κινουμένῳ
γινώσκεσθαι. ἐν κινήσει δ' εἶναι τὰ ὄντα κἀκεῖνος ᾤετο καὶ
17 οἱ πολλοί. παραπλησίως δὲ τούτοις καὶ Ἀλκμαίων ἔοικεν
ὑπολαβεῖν περὶ ψυχῆς· φησὶ γὰρ αὐτὴν ἀθάνατον εἶναι 30
διὰ τὸ ἐοικέναι τοῖς ἀθανάτοις· τοῦτο δ' ὑπάρχειν αὐτῇ ὡς
ἀεὶ κινουμένῃ· κινεῖσθαι γὰρ καὶ τὰ θεῖα πάντα συνεχῶς
18 ἀεί, σελήνην, ἥλιον, τοὺς ἀστέρας καὶ τὸν οὐρανὸν ὅλον. τῶν δὲ 405b
φορτικωτέρων καὶ ὕδωρ τινὲς ἀπεφήναντο, καθάπερ Ἵππων·
πεισθῆναι δ' ἐοίκασιν ἐκ τῆς γονῆς, ὅτι πάντων ὑγρά· καὶ
γὰρ ἐλέγχει τοὺς αἷμα φάσκοντας τὴν ψυχήν, ὅτι ἡ γονὴ
19 οὐχ αἷμα· ταύτην δ' εἶναι τὴν πρώτην ψυχήν. ἕτεροι δ' αἷ- 5
μα, καθάπερ Κριτίας, τὸ αἰσθάνεσθαι ψυχῆς οἰκειότατον
ὑπολαμβάνοντες, τοῦτο δ' ὑπάρχειν διὰ τὴν τοῦ αἵματος φύ-
σιν. πάντα γὰρ τὰ στοιχεῖα κριτὴν εἴληφε, πλὴν τῆς γῆς·

14. τε om. X ‖ χρῆσθαι E X, χρῆται etiam Simpl. ‖ 16. ἁπάντων S y Them. Rodier, πάντων reliqui, etiam E (Stapf.) Simpl. Philop. ‖ 17. τε om S V W y ‖ 19. virgulam post Θαλῆς et post ἀπομν. posuit Diels ‖ 20. ὑπολαμβάνειν T U V W y, ἀπολαμβάνειν S, ὑπολαβεῖν etiam Them. ‖ τὴν λίθον X Them. Simpl. Philop., τὸν etiam Soph. ‖ 24. λεπτομερέστατον T U V W ‖ 25. φησι τὴν ψ. U W ‖ 26. καὶ γὰρ ἀσ. T U ‖ 27. τε] δὲ S X Zeller Ph. d. Gr. I.[5] p. 646, adn. 3, δὴ T U Bek. Trend., om. V, τε etiam Soph. et, ut videtur, Them. 13, 28, Torst. ‖ 31. post ἀθανάτοις virgulam vulg., colon posuit Diels ‖ 32. ἅπαντα S T U V X ‖ 405 b, 1. τοὺς om. U V W, leg. etiam Them. Soph. ‖ 2. post Ἵππων vulg. punctum, colon Diels ‖ 3. post ὑγρά punctum Diels ‖ 5. τὴν om. S T, πρώτην om. W, πρώτην δὲ ψυχὴν (v.l. τὴν ψυχὴν) λέγει τὴν γονὴν Philop.

motion is the spherical; and of atoms of this shape mind, like fire, consists. Anaxagoras, while apparently understanding by mind 13 something different from soul, as we remarked above, really treats both as a single nature, except that it is preeminently mind which he takes as his first principle; he says at any rate that mind alone of things that exist is simple, unmixed, pure. But he refers both knowledge and motion to the same principle, when he says that mind sets the universe in motion. Thales, too, apparently, 14 judging from the anecdotes related of him, conceived soul as a cause of motion, if it be true that he affirmed the loadstone to possess soul, because it attracts iron. Diogenes, 15 however, as also some others, identified soul with air. Air, they thought, is made up of the finest particles and is the first principle: and this explains the fact that the soul knows and is a cause of motion, knowing by virtue of being the primary element from which all else is derived, and causing motion by the extreme fineness of its parts. Heraclitus takes soul for his first 16 principle, as he identifies it with the vapour from which he derives all other things, and further says that it is the least corporeal of things and in ceaseless flux; and that it is by something in motion that what is in motion is known; for he, like most philosophers, conceived all that exists to be in motion. Alcmaeon, too, seems to have had a similar conception. For soul, 17 he maintains, is immortal because it is like the beings which are immortal; and it has this attribute in virtue of being ever in motion: for he attributes continuous and unending motion to everything which is divine, moon, sun, stars and the whole heaven. Among cruder thinkers there have been some, like 18 Hippon, who have even asserted the soul to be water. The reason for this view seems to have been the fact that in all animals the seed is moist: in fact, Hippon refutes those who make the soul to be blood by pointing out that the seed is not blood, and that this seed is the rudimentary soul. Others, again, 19 like Critias, maintain the soul to be blood, holding that it is sentience which is most distinctive of soul and that this is due to the nature of blood. Thus each of the four elements except earth has found its supporter. Earth, however,

Thales.

Diogenes.

Heraclitus.

Alcmaeon.

Hippon.

Critias.

89, 3 sq., τὴν πρώτην leg. etiam Soph. || 6. τῆς ψυχῆς U y || 8. γὰρ] δ' οὖν T V Them., οὖν Soph., ἄρα Susemihl.

ταύτην δ' οὐθεὶς ἀποπέφανται, πλὴν εἴ τις αὐτὴν εἴρηκεν ἐκ πάντων εἶναι τῶν στοιχείων ἢ πάντα. 10

20 ὁρίζονται δὲ πάντες τὴν ψυχὴν τρισὶν ὡς εἰπεῖν, κινήσει, αἰσθήσει, τῷ ἀσωμάτῳ· τούτων δ' ἕκαστον ἀνάγεται πρὸς τὰς ἀρχάς. διὸ καὶ οἱ τῷ γινώσκειν ὁριζόμενοι αὐτὴν ἢ στοιχεῖον ἢ ἐκ τῶν στοιχείων ποιοῦσι, λέγοντες παραπλησίως ἀλλήλοις, πλὴν ἑνός· φασὶ γὰρ γινώσκεσθαι τὸ ὅμοιον τῷ ὁμοίῳ· ἐπειδὴ γὰρ ἡ 15 ψυχὴ πάντα γιγνώσκει, συνιστᾶσιν αὐτὴν ἐκ πασῶν τῶν ἀρ-21 χῶν. ὅσοι μὲν οὖν μίαν τινὰ λέγουσιν αἰτίαν καὶ στοιχεῖον ἕν, καὶ τὴν ψυχὴν ἓν τιθέασιν, οἷον πῦρ ἢ ἀέρα· οἱ δὲ πλείους 22 λέγοντες τὰς ἀρχὰς καὶ τὴν ψυχὴν πλείω ποιοῦσιν. Ἀναξαγόρας δὲ μόνος ἀπαθῆ φησὶν εἶναι τὸν νοῦν, καὶ κοινὸν 20 οὐθὲν οὐθενὶ τῶν ἄλλων ἔχειν. τοιοῦτος δ' ὢν πῶς γνωριεῖ καὶ διὰ τίν' αἰτίαν, οὔτ' ἐκεῖνος εἴρηκεν οὔτ' ἐκ τῶν εἰρημένων συμ-23 φανές ἐστιν. ὅσοι δ' ἐναντιώσεις ποιοῦσιν ἐν ταῖς ἀρχαῖς, καὶ τὴν ψυχὴν ἐκ τῶν ἐναντίων συνιστᾶσιν· οἱ δὲ θάτερον τῶν ἐναντίων, οἷον θερμὸν ἢ ψυχρὸν ἤ τι τοιοῦτον ἄλλο, καὶ τὴν 25 ψυχὴν ὁμοίως ἕν τι τούτων τιθέασιν· διὸ καὶ τοῖς ὀνόμασιν ἀκολουθοῦσιν· οἱ μὲν γὰρ τὸ θερμὸν λέγοντες, ὅτι διὰ τοῦτο καὶ τὸ ζῆν ὠνόμασται, οἱ δὲ τὸ ψυχρὸν διὰ τὴν ἀναπνοὴν καὶ τὴν κατάψυξιν καλεῖσθαι ψυχήν. τὰ μὲν οὖν παραδεδομένα περὶ ψυχῆς, καὶ δι' ἃς αἰτίας λέγουσιν οὕτω, ταῦτ' ἐστίν. 30

3 Ἐπισκεπτέον δὲ πρῶτον μὲν περὶ κινήσεως· ἴσως γὰρ οὐ μόνον ψεῦδός ἐστι τὸ τὴν οὐσίαν αὐτῆς τοιαύτην εἶναι οἵαν φασὶν οἱ λέγοντες ψυχὴν εἶναι τὸ κινοῦν ἑαυτὸ ἢ δυνάμενον **406a** κινεῖν, ἀλλ' ἕν τι τῶν ἀδυνάτων τὸ ὑπάρχειν αὐτῇ κίνησιν. 2 ὅτι μὲν οὖν οὐκ ἀναγκαῖον τὸ κινοῦν καὶ αὐτὸ κινεῖσθαι, πρότερον εἴρηται. διχῶς δὲ κινουμένου παντός (ἢ γὰρ καθ' ἕτερον

9. ἀποφαίνεται S T V W X, ἀποπέφανται etiam Them. || 10. ἢ πάντα nunc E sed inter ἢ et πάντα ras., cui subfuisse coni. ἃ Rodier, ὅς Stapfer, ἢ ὅς πάντα Soph. 15, 7 || 11. δὴ pro δὲ coni. Hayduck, recepit Rodier, δὴ etiam Them. 14, 4 || πάντες ὡς εἰπεῖν τ. ψ. coni. Christ || τὴν om. S T, τὴν ψυχὴν om. V || 15. γιγν. καὶ τὸ ὅμ. U, τὸ ὅμοιον γιγν. S T y, καὶ τὸ ὅμοιον γιγν. V W || τῷ ὁμ. τὸ ὅμ. X || ἐπειδὴ...16. ἀρχῶν post 19. ποιοῦσιν transponenda censet Steinhart, Symb. Crit. p. 4, cui assentitur Susemihl, Oecon. p. 84 || ἡ om. E || 18. πλείω U V W, πλείονα y || 19. ποιοῦσιν] λέγουσιν S T U W y, ποιοῦσιν etiam Soph. || 21. γνωρίζει S U, γνωρίζοι y, futurum etiam Philop. || 25. ἄλλο om. X, ἄλλο... 26. τούτων om. E, tuentur haec verba Philop. 92, 1 Soph. || 26. post τιθέασιν vulg. punctum, colon posuit Diels || 27. γὰρ ex uno E restituit et post ἀκολουθοῦσιν colon posuit Torst., cui assentitur etiam Noetel p. 142, praeterquam quod aut λέγοντες post 28. ψυχρὸν

has not been put forward by anyone, except by those who have explained the soul to be derived from, or identical with, all the elements.

Summary.

Thus practically all define the soul by three characteristics, 20 motion, perception and incorporeality; and each of these characteristics is referred to the ultimate principles. Hence all who define soul by its capacity for knowledge either make it an element or derive it from the elements, being on this point, with one exception, in general agreement. Like, they tell us, is known by like; and therefore, since the soul knows all things, they say it consists of all the ultimate principles. Thus 21 those thinkers who admit only one cause and one element, as fire or air, assume the soul also to be one element; while those who admit a plurality of principles assume plurality also in the soul. Anaxagoras alone says that mind cannot be acted upon and has 22 nothing in common with any other thing. How, if such be its nature, it will know anything and how its knowledge is to be explained, he has omitted to state; nor do his utterances afford a clue. All those who introduce pairs of opposites among their 23 principles make the soul also to consist of opposites; while those who take one or other of the two opposites, either hot or cold or something else of the sort, reduce the soul also to one or other of these elements. Hence, too, they etymologise according to their theories; some identify soul with heat, deriving *ζῆν* from *ζεῖν*, and contend that this identity accounts for the word for life; others say that what is cold is called soul from the respiratory process and consequent "cooling down," deriving *ψυχή* from *ψύχειν*. Such, then, are the views regarding soul which have come down to us and the grounds on which they are held.

Criticism of the theory that soul is moved.

We have to consider in the first place the subject of motion. **3** For, unless I am mistaken, the definition of soul as the self-moving, or as that which is capable of self-motion, misrepresents its essential nature: nay, more; it is quite impossible for soul to have the attribute of motion at all. To begin with, it has been already stated that a thing may 2 cause motion without necessarily being moved itself. A thing is always moved in one of two ways; that is, either indirectly,

poni, aut verba 29. *καλεῖσθαι ψυχήν* eici vult, virgulam post *λέγοντες* omissam post *θερμὸν* posuit Rodier || 28. post *ψυχρὸν* virg. Torst. Biehl Rodier, quod si recte est, illud 27. *γὰρ* delendum est || 406 a, 1. *εἶναι τὴν ψυχὴν* U, *τὴν* om. etiam Philop. || *αὐτὸ* U W, *ἑαυτὸ* etiam Them. Philop.

ἢ καθ' αὑτό· καθ' ἕτερον δὲ λέγομεν, ὅσα κινεῖται τῷ ἐν 5
κινουμένῳ εἶναι, οἷον πλωτῆρες· οὐ γὰρ ὁμοίως κινοῦνται τῷ
πλοίῳ· τὸ μὲν γὰρ καθ' αὑτὸ κινεῖται, οἱ δὲ τῷ ἐν κινου-
μένῳ εἶναι. δῆλον δ' ἐπὶ τῶν μορίων· οἰκεία μὲν γάρ ἐστι
κίνησις ποδῶν βάδισις, αὕτη δὲ καὶ ἀνθρώπων· οὐχ ὑπάρ-
χει δὲ τοῖς πλωτῆρσι τότε) διστῶς δὲ λεγομένου τοῦ κινεῖ- 10
σθαι, νῦν ἐπισκοποῦμεν περὶ τῆς ψυχῆς εἰ καθ' αὑτὴν κι-
3 νεῖται καὶ μετέχει κινήσεως. τεσσάρων δὲ κινήσεων οὐσῶν,
φορᾶς ἀλλοιώσεως φθίσεως αὐξήσεως, ἢ μίαν τούτων κι-
νοῖτ' ἂν ἢ πλείους ἢ πάσας. εἰ δὲ κινεῖται μὴ κατὰ συμ-
βεβηκός, φύσει ἂν ὑπάρχοι κίνησις αὐτῇ· εἰ δὲ τοῦτο, καὶ 15
τόπος· πᾶσαι γὰρ αἱ λεχθεῖσαι κινήσεις ἐν τόπῳ. εἰ δ'
ἐστὶν ἡ οὐσία τῆς ψυχῆς τὸ κινεῖν ἑαυτήν, οὐ κατὰ συμβε-
βηκὸς αὐτῇ τὸ κινεῖσθαι ὑπάρξει, ὥσπερ τῷ λευκῷ ἢ
τριπήχει· κινεῖται γὰρ καὶ ταῦτα, ἀλλὰ κατὰ συμβεβη-
κός· ᾧ γὰρ ὑπάρχουσιν, ἐκεῖνο κινεῖται, τὸ σῶμα. διὸ καὶ 20
οὐκ ἔστι τόπος αὐτῶν· τῆς δὲ ψυχῆς ἔσται, εἴπερ φύσει κι-
4 νήσεως μετέχει. ἔτι δ' εἰ φύσει κινεῖται, κἂν βίᾳ κινη-
θείη· κἂν εἰ βίᾳ, καὶ φύσει. τὸν αὐτὸν δὲ τρόπον ἔχει καὶ
περὶ ἠρεμίας· εἰς ὃ γὰρ κινεῖται φύσει, καὶ ἠρεμεῖ ἐν τούτῳ
φύσει· ὁμοίως δὲ καὶ εἰς ὃ κινεῖται βίᾳ, καὶ ἠρεμεῖ ἐν τού- 25
τῳ βίᾳ. ποῖαι δὲ βίαιοι τῆς ψυχῆς κινήσεις ἔσονται καὶ
5 ἠρεμίαι, οὐδὲ πλάττειν βουλομένοις ῥᾴδιον ἀποδοῦναι. ἔτι δ'
εἰ μὲν ἄνω κινήσεται, πῦρ ἔσται, εἰ δὲ κάτω, γῆ· τούτων
γὰρ τῶν σωμάτων αἱ κινήσεις αὗται. ὁ δ' αὐτὸς λόγος καὶ
6 περὶ τῶν μεταξύ. ἔτι δ' ἐπεὶ φαίνεται κινοῦσα τὸ σῶμα, 30
ταύτας εὔλογον κινεῖν τὰς κινήσεις ἃς καὶ αὐτὴ κινεῖται.
εἰ δὲ τοῦτο, καὶ ἀντιστρέψασιν εἰπεῖν ἀληθὲς ὅτι ἣν τὸ σῶ-

10. *διστῶς* solus E Philop. Biehl Rodier, reliqui et scripti et impressi *διχῶς*, etiam corr. rc. E (Rr.) ‖ *δὲ*] *οὖν* U, Them. in interpr., *δὴ* coni. Susemihl, Jen. Lit. 1877, p. 707, *δὲ* etiam Philop. ‖ 12. *καὶ* <*οὐκ εἰ*>, vel *καὶ* <*οὐκ εἰ καθ' ἕτερον*> coni. Susemihl, *καὶ* <*φύσει*> Steinhart ‖ 13. *φθίσεως* om. pr. E, leg. etiam Them. Philop., Dittenberger, Gött. gelehrte Anzeigen 1863 p. 1612, ex verbo *φθίσεως* in pr. E omisso suspicatur, primum tres tantum motus species hoc loco nominatas esse: cf. Soph. 17, 11 *τριῶν δὲ οὐσῶν κινήσεων φυσικῶν* ‖ 18. *ὑπάρξει* praeter ceteros codd. etiam E, sed *ξ* in ras. (Stapf.), leg. et Soph. ‖ *τῷ τριπήχει* T U V W Bek. Trend. Torst., *τῷ* om. etiam Philop. 101, 8 (ad 101, 11 v. Hayducki adn. crit.) Soph. ‖ 20. virgulam post *κινεῖται* om. Bek. Trend., addidit Torst. ‖ 23. *εἰ* om. pr. E (Trend. Bus.) ‖ *καὶ φύσει*] *κατὰ φύσιν* pr. E, verba *κἂν εἰ βίᾳ, καὶ φύσει* Trendelenburgio suspecta videntur, leg. etiam Philop. Simpl. Soph. ‖

through something else, or directly, of and through itself. We say things are moved through something else when they are in something else that is moved: as, for instance, sailors on board a ship: for they do not move in the same sense as the ship, for the ship moves of itself, they because they are in something else which is moved. This is evident if we consider the members of the body: for the motion proper to the feet and so to men also is walking, but it is not attributable to our sailors in the case supposed. There being thus two senses in which the term "to be moved" is used, we are now enquiring whether it is of and through itself that the soul is moved and partakes of motion.

Is the soul moved *per se*?

3 Of motion there are four species, change of place or locomotion, change of quality or alteration, diminution and augmentation. It is, then, with one or more or all of these species that the soul will move. If it is not indirectly or *per accidens* that it moves, motion will be a natural attribute of soul; and, if this be so, it will also have position in space, since all the aforesaid species of motion are in space. But, if it be the essential nature of soul to move itself, motion will not be an accidental attribute of soul, as it is of whiteness or the length of three cubits; for these are also moved, but *per accidens*, viz. by the motion of the body to which these attributes belong. This, too, is why these attributes have no place belonging to them; but the soul will have a place, if indeed motion is its natural attribute.

Species of motion.

4 Further, if it moves naturally, then it will also move under constraint; and, if under constraint, then also naturally. So likewise with rest. For, as it remains at rest naturally in any state into which it moves naturally, so similarly it remains at rest by constraint in any state into which it moves by constraint. But what is meant by constrained motions or states of rest of the soul it is not easy to explain, even though we give free play to fancy. 5 Again, if its motion tends upward, it will be fire; if downward, earth; these being the motions proper to these natural bodies. And the same argument applies to directions of motion which are intermediate.

The theory involves absurd consequences.

6 Again, since it appears that the soul sets the body in motion, it may reasonably be supposed to impart to it the motions which it has itself: and, if so, then conversely it is true to say that the motion which the soul has itself is the motion which the body

28. κινήσεται E_1, superscr. θη E_2 (Stapf.) || 30. ἔπειτα δ' εἰ corr. E || 31. εὔλογον ταύτας S T V W X y, ταύτας εὔλ. etiam Soph.

μα κινεῖται, ταύτην καὶ αὐτή. τὸ δὲ σῶμα κινεῖται φορᾷ· 406b
ὥστε καὶ ἡ ψυχὴ [μεταβάλλοι ἂν κατὰ τὸ σῶμα] ἢ ὅλη ἢ
κατὰ μόρια μεθισταμένη. εἰ δὲ τοῦτ' ἐνδέχεται, καὶ ἐξελθοῦ-
σαν εἰσιέναι πάλιν ἐνδέχοιτ' ἄν· τούτῳ δ' ἕποιτ' ἂν τὸ ἀνί-
7 στασθαι τὰ τεθνεῶτα τῶν ζῴων. τὴν δὲ κατὰ συμβεβηκὸς 5
κίνησιν κἂν ὑφ' ἑτέρου κινοῖτο· ὠσθείη γὰρ ἂν βίᾳ τὸ ζῷον.
οὐ δεῖ δὲ ᾧ τὸ ὑφ' ἑαυτοῦ κινεῖσθαι ἐν τῇ οὐσίᾳ, τοῦθ' ὑπ'
ἄλλου κινεῖσθαι, πλὴν εἰ μὴ κατὰ συμβεβηκός, ὥσπερ οὐδὲ
τὸ καθ' αὑτὸ ἀγαθὸν ἢ δι' αὑτό, τὸ μὲν δι' ἄλλο εἶναι, τὸ
δ' ἑτέρου ἕνεκεν. τὴν δὲ ψυχὴν μάλιστα φαίη τις ἂν ὑπὸ τῶν 10
8 αἰσθητῶν κινεῖσθαι, εἴπερ κινεῖται. ἀλλὰ μὴν καὶ εἰ κινεῖ
γε αὐτὴ αὑτήν, καὶ αὐτὴ κινοῖτ' ἄν, ὥστ' εἰ πᾶσα κίνησις
ἔκστασίς ἐστι τοῦ κινουμένου ᾗ κινεῖται, καὶ ἡ ψυχὴ ἐξίσταιτ'
ἂν ἐκ τῆς οὐσίας αὐτῆς, εἰ μὴ κατὰ συμβεβηκὸς ἑαυτὴν κινεῖ,
9 ἀλλ' ἔστιν ἡ κίνησις τῆς οὐσίας αὐτῆς καθ' αὑτήν. ἔνιοι δὲ καὶ 15
κινεῖν φασὶ τὴν ψυχὴν τὸ σῶμα ἐν ᾧ ἐστίν, ὡς αὐτὴ κινεῖται,
οἷον Δημόκριτος, παραπλησίως λέγων Φιλίππῳ τῷ κωμῳ-
δοδιδασκάλῳ· φησὶ γὰρ τὸν Δαίδαλον κινουμένην ποιῆσαι
τὴν ξυλίνην Ἀφροδίτην, ἐγχέαντ' ἄργυρον χυτόν· ὁμοίως δὲ
καὶ Δημόκριτος λέγει· κινουμένας γάρ φησι τὰς ἀδιαιρέτους 20
σφαίρας, διὰ τὸ πεφυκέναι μηδέποτε μένειν, συνεφέλκειν
10 καὶ κινεῖν τὸ σῶμα πᾶν. ἡμεῖς δ' ἐρωτήσομεν εἰ καὶ ἠρέ-
μησιν ποιεῖ ταὐτὰ ταῦτα. πῶς δὲ ποιήσει, χαλεπὸν ἢ καὶ
ἀδύνατον εἰπεῖν. ὅλως δ' οὐχ οὕτω φαίνεται κινεῖν ἡ ψυχὴ
τὸ ζῷον, ἀλλὰ διὰ προαιρέσεώς τινος καὶ νοήσεως.

11 τὸν αὐτὸν δὲ τρόπον καὶ ὁ Τίμαιος φυσιολογεῖ τὴν ψυχὴν
κινεῖν τὸ σῶμα· τῷ γὰρ κινεῖσθαι αὐτὴν καὶ τὸ σῶμα κινεῖν
διὰ τὸ συμπεπλέχθαι πρὸς αὐτό. συνεστηκυῖαν γὰρ ἐκ τῶν στοι-

406b, 2. *κατὰ τὸ σῶμα* omnes codd., etiam Soph. et, ut videtur, Simpl. 37, 3. 4 et vet. transl., *κατὰ τόπον* coni. Bon., Hermes VII, p. 424, *μεταβάλλοι...σῶμα* unc inclusi, cf. Them. 16, 16 sq.; sin verba genuina sunt, fort. legendum *ψυχή. μεταβάλλο* <*δ'*> *ἂν κτέ.* || 3. *ἐνδέχοιτο* STVW, *εἰ δὲ τοῦτο, ἐνδέχοιτ' ἂν καὶ* y Bon. l. l. *ἐνδέχεται* etiam Soph. et vet. transl. || 4. *ἐνδέχοιτ' ἄν* om. SWXy Bon., leg. etiar Soph. et vet. transl. || *τούτῳ...*5. *ζῴων* a manu Christiani lectoris inserta esse suspicatı Trend., cui adversatur Bon. || 8. *μὴ* om. E Simpl., leg. Philop. || 9. *δι' αὑτὸ ὂν* con Christ || 12. *γε* om. STVW Alex. *ἀπ. καὶ λύσ.* 46, 24 Soph. || *ἑαυτήν* STUVW et corr. E_2 Soph. || *εἰ*] *ἐπεὶ* Alex. 46, 25 || 13. *ἐξισταίη* T, *ἐξίσταται* (omisso *ἂν*) SW *ἐξίστατο* y, *ἐξίσταιτο ἂν* Alex. 46, 26 || 14. *οὐσίας αὐτῆς καθ' αὑτήν*, sed *καθ' αὑτήν* expun E, *αὐτῆς* receperunt Biehl Rodier, *αὐτῆς* hoc loco legisse videntur Them. 18, 11 Soph. 18, 36, omittunt ceteri, etiam Simpl. Philop. || 15. *καθ' αὑτήν* unc. incl. Tor

has. Now the motion of the body is motion in space: therefore the motion of the soul is also motion in space, whether the whole soul so move, or only the parts, the whole remaining at rest. But, if this is admissible, the soul might also conceivably quit the body and re-enter; and this would involve the consequence that dead animals may rise again.

To return now to motion *per accidens*, soul might certainly 7 thus be moved by something external as well:—for the animal might be thrust by force. But a thing which has self-motion as part of its essential nature cannot be moved from without except incidentally; any more than that which is good in itself can be means to an end, or that which is good for its own sake can be so for the sake of something else. But, supposing the soul to be moved at all, one would say that sensible things would be the most likely to move it.

Again, even if soul does move itself, this is equivalent to saying 8 that it is moved; and, all motion being defined as displacement of the thing moved *quâ* moved, it will follow that the soul will be displaced from its own essential nature, if it be true that its self-movement is not an accident, but that motion belongs to the essence of soul in and of itself. Some say that the soul in fact 9 moves the body, in which it is, in the same way in which it moves itself. So, for example, Democritus; and herein he resembled Philippus, the comic poet, who tells us that Daedalus endowed the wooden Aphrodite with motion, simply by pouring in quicksilver: this is very similar to what Democritus says. For according to him the spherical atoms, which from their nature can never remain still, being moved, tend to draw the whole body after them and thus set it in motion. But do these same atoms, 10 we shall ask in our turn, produce rest, as well as motion? How this should be, it is difficult, if not impossible, to say. And, speaking generally, it is not in this way that the soul would seem to move the animal, but by means of purpose of some sort, that is, thought.

Democritus.

Animal motion is purposive.

In the same way the Platonic Timaeus explains on physical 11 grounds that the soul sets the body in motion, for by its own motion it sets the body also in motion, because it is closely interwoven with it. For when it had been made out of

The 'Timaeus.'

tuetur haec praeter omnes codd. Alex. 47, 1. || 19. δὲ om. W y || 21. post σφαίρας virg. posuit Diels, post μένειν virg. om. Biehl Rodier || 22. καὶ] τε καὶ T V y || ἐρωτήσωμεν S T U V W || ἠρεμήσειν S T U V W, ἠρεμεῖν X, ἠρέμησιν etiam Soph. || 23. ποιεῖ τοῦτ αὐτό S T U W X, τοῦτο ποιεῖ ποτε V, ποιεῖ τοῦτο αὐτὸ y et E, sed in rasura, videtur subfuisse ταῦτα ταὐτὰ (Bek. Trend.), τοῦτο ποιεῖ αὐτό Soph. 18, 31.

χείων καὶ μεμερισμένην κατὰ τοὺς ἁρμονικοὺς ἀριθμούς, ὅπως
αἴσθησίν τε σύμφυτον ἁρμονίας ἔχῃ καὶ τὸ πᾶν φέρηται 30
συμφώνους φοράς, τὴν εὐθυωρίαν εἰς κύκλον κατέκαμψεν·
καὶ διελὼν ἐκ τοῦ ἑνὸς κύκλους δύο δισσαχῇ συνημμένους
πάλιν τὸν ἕνα διεῖλεν εἰς ἑπτὰ κύκλους, ὡς οὔσας τὰς τοῦ 407a
12 οὐρανοῦ φορὰς τὰς τῆς ψυχῆς κινήσεις. πρῶτον μὲν οὖν οὐ καλῶς τὸ λέγειν τὴν ψυχὴν μέγεθος εἶναι· τὴν γὰρ τοῦ παντὸς δῆλον ὅτι τοιαύτην εἶναι βούλεται οἷόν ποτ' ἐστὶν ὁ καλούμενος νοῦς· οὐ γὰρ δὴ οἷόν γ' ἡ αἰσθητική, οὐδ' οἷον ἡ ἐπιθυ- 5
13 μητική· τούτων γὰρ ἡ κίνησις οὐ κυκλοφορία· ὁ δὲ νοῦς εἷς καὶ συνεχὴς ὥσπερ καὶ ἡ νόησις· ἡ δὲ νόησις τὰ νοήματα· ταῦτα δὲ τῷ ἐφεξῆς ἕν, ὡς ὁ ἀριθμός, ἀλλ' οὐχ ὡς τὸ μέγεθος· διόπερ οὐδ' ὁ νοῦς οὕτω συνεχής, ἀλλ' ἤτοι ἀμερὴς ἢ οὐχ ὡς μέγεθός τι συνεχής. πῶς γὰρ δὴ καὶ νοήσει μέγε- 10
θος ὤν; πότερον ὁτῳοῦν μορίῳ τῶν αὐτοῦ; μορίῳ δ' ἤτοι κατὰ
14 μέγεθος ἢ κατὰ στιγμήν, εἰ δεῖ καὶ τοῦτο μόριον εἰπεῖν. εἰ μὲν οὖν κατὰ στιγμήν, αὗται δ' ἄπειροι, δῆλον ὡς οὐδέποτε διέξεισιν· εἰ δὲ κατὰ μέγεθος, πολλάκις ἢ ἀπειράκις νοήσει τὸ αὐτό. φαίνεται δὲ καὶ ἅπαξ ἐνδεχόμενον. εἰ δ' ἱκα- 15
νὸν θιγεῖν ὁτῳοῦν τῶν μορίων, τί δεῖ κύκλῳ κινεῖσθαι ἢ καὶ ὅλως μέγεθος ἔχειν; εἰ δ' ἀναγκαῖον νοῆσαι τῷ ὅλῳ κύκλῳ θιγόντα, τίς ἐστιν ἡ τοῖς μορίοις θίξις; ἔτι δὲ πῶς νοήσει τὸ μεριστὸν ἀμερεῖ ἢ τὸ ἀμερὲς μεριστῷ; ἀναγκαῖον δὲ τὸν νοῦν εἶναι τὸν κύκλον τοῦτον· νοῦ μὲν γὰρ κίνησις νόησις, κύ- 20
15 κλου δὲ περιφορά· εἰ οὖν ἡ νόησις περιφορά, καὶ νοῦς ἂν εἴη

30. τε] *τε καὶ* T U, *καὶ* om. etiam Them. Philop. || *ἁρμονίαν* T U W Soph., *ἁρμονίας* etiam Them. Philop. in interpr., v. Hayducki ap. crit. 22, 27 || 32. *κύκλους δύο* ex uno E recepit Torst., reliqui ante Torst. omnes *δύο κύκλους*, Soph. 19, 23 *ἐκ τοῦ ἑνὸς κύκλου δύο* || 407 a, 5. *γ'* om. W y, leg. etiam Simpl. in prooemio ad lib. I, p. 4, 1 et Soph. || 6. ante *ὁ δὲ* transponendum 19. *ἀναγκαῖον*...22. *νόησις* censet Susemihl, Oecon. p. 84 || *τούτων*... *κυκλοφορία* unc. incl. Essen, p. 18 || 7. *καὶ συνεχὴς* unc. incl. Essen || 8. *ὁ ἀριθμός* pr. E (Trend.) et U Simpl. Philop. (ed. princeps) Torst., reliqui ante Torst. omnes om. articulum, etiam Philop. (Hayduck cum codd.) || 9. *οὐδὲ νοῦς* U W, *οὐδὲ* delere vult A. Martin, Revue Critique, 1902, p. 427 || *οὕτω* Biehlio suspectum videtur, delendum censet A. Martin, legit etiam Simpl. Soph. 20, 37 || *συνεχής* unc. incl. Essen || 11. *ὤν; πότερον ὁτῳοῦν μορίῳ* recepit Biehl ex solo pr. E (cf. Susemihl, Oecon. p. 84), *ὢν ὁτῳοῦν τῶν μορίων* (omisso *πότερον*) rc. E et ceteri codd. (praeterquam quod V *ἐν ὁτ.* praebet) Philop., quam lectionem etiam Bek. recepit, *ὢν πότερον καθόλου ἢ ὁτῳοῦν τῶν μορ.* scripsit Trend., sic etiam vet. transl., *ὤν; πότερον καθ' ὅλον θιγὼν ἢ ὁτῳοῦν τῶν μορ.* posuit Torst., *ὤν; πότερον καθ' ὅλον ἢ ἐν ὁτῳοῦν τῶν μορίων* Simpl. 42, 38, Soph. 21, 7 (coll. 21, 30; 22, 11. 23), unde *ὤν; πότερον καθ' ὅλον ἢ ὁτῳοῦν τῶν μορίων* Rodier || *τῶν* om. V Soph. || *ἑαυτοῦ* T, *αὐτοῦ* y Ald. Sylb. Rodier, etiam Philop. Simpl. Soph. || *μορίων δ'* omnes

the elements and divided in harmonical ratios in order that it might have a native perception of proportion and that the universe might move in harmonic revolutions, he, the creator, proceeded to bend the straight line into a circle; and then to split the one circle into two, intersecting at two points; and one of the two circles he split into seven, the revolutions of heaven being regarded as the motions of the soul. 12 In the first place, it is not right to call the soul a magnitude. For by the soul of the universe Timaeus clearly intends something of the same sort as what is known as mind: he can hardly mean that it is like the sensitive or appetitive soul, whose movements are not circular.

Criticism in detail.

13 But the thinking mind is one and continuous in the same sense as the process of thinking. Now thinking consists of thoughts. But the unity of these thoughts is a unity of succession, the unity of a number, and not the unity of a magnitude. This being so, neither is mind continuous in this latter sense, but either it is without parts or else it is continuous in a different sense from an extended magnitude. For how can it possibly think if it be a magnitude? Will it think with some one or other of its parts: such parts being taken either in the sense of magnitudes or in the sense of points, if a point can be called a part? 14 If it be with parts in the sense of points, and there is an infinity of these, clearly mind will never reach the end of them; while, if they be taken in the sense of magnitudes, mind will have the same thoughts times without end. But experience shows that we can think a thought once and no more. Again, if it be enough for the soul to apprehend with one or other of its parts, what need is there for it to be moving in a circle or to have magnitude at all? But, if it is necessary to thought that the mind should bring the whole circle into contact, what does the contact of the several parts mean? Again, how will it think that which is divisible by means of that which is without parts, or that which is without parts by means of that which is divisible? It must be mind which is meant by the circle in question. For when mind moves it thinks; when a circle moves it revolves. 15 If, then, thought is a revolution, the circle which has such a revolution must

libri scripti et impressi, etiam Philop. (sed v. l. *μορίῳ*) Soph., *μορίῳ δ'* e Susemihlii et sua coniectura Biehl, etiam Rodier || scripsisse Arist. v. 11. *ὤν; πότερον ὁτῳοῦν τῶν αὑτοῦ* <*μορίων*>; *μορίων δ'* suspicor || 15. *φαίνεται...ἐνδεχόμενον* a philosopho Platonico interpolatum existimat Christ, non legisse videtur Philop., legunt etiam Them. Simpl. Soph. || *εἴ θ'* coni. Susemihl || 16. *καὶ* om. S V W, leg. etiam Them. || 19. *ἢ τὸ* E (Trend.) et y Philop. Soph. vet. transl. Torst., reliqui ante Torst. omnes *καὶ τὸ* || *ἀναγκαῖον*] v. ad 407 a, 6.

ὁ κύκλος, οὗ ἡ τοιαύτη περιφορὰ [νόησις]. ἀεὶ δὲ δή τι νοή-
σει· δεῖ γάρ, εἴπερ ἀΐδιος ἡ περιφορά· τῶν μὲν γὰρ πρα-
κτικῶν νοήσεων ἔστι πέρατα (πᾶσαι γὰρ ἑτέρου χάριν), αἱ δὲ
θεωρητικαὶ τοῖς λόγοις ὁμοίως ὁρίζονται· λόγος δὲ πᾶς ὁρι- 25
σμὸς ἢ ἀπόδειξις· αἱ μὲν οὖν ἀποδείξεις καὶ ἀπ' ἀρχῆς, καὶ
ἔχουσί πως τέλος τὸν συλλογισμὸν ἢ τὸ συμπέρασμα· εἰ δὲ
μὴ περατοῦνται, ἀλλ' οὐκ ἀνακάμπτουσί γε πάλιν ἐπ' ἀρχήν,
προσλαμβάνουσαι δ' ἀεὶ μέσον καὶ ἄκρον εὐθυποροῦσιν· ἡ δὲ
περιφορὰ πάλιν ἐπ' ἀρχὴν ἀνακάμπτει. οἱ δ' ὁρισμοὶ πάν- 30
16 τες πεπερασμένοι. ἔτι εἰ ἡ αὐτὴ περιφορὰ πολλάκις, δεή-
17 σει πολλάκις νοεῖν τὸ αὐτό. ἔτι δ' ἡ νόησις ἔοικεν ἠρεμήσει
τινὶ καὶ ἐπιστάσει μᾶλλον ἢ κινήσει· τὸν αὐτὸν δὲ τρόπον
18 καὶ ὁ συλλογισμός. ἀλλὰ μὴν οὐδὲ μακάριόν γε τὸ μὴ ῥᾴ-
διον ἀλλὰ βίαιον. εἰ δ' ἐστὶν ἡ κίνησις αὐτῆς μὴ οὐσία, πα- 407 b
19 ρὰ φύσιν ἂν κινοῖτο. ἐπίπονον δὲ καὶ τὸ μεμεῖχθαι τῷ σώ-
ματι μὴ δυνάμενον ἀπολυθῆναι, καὶ προσέτι φευκτόν, εἴ-
περ βέλτιον τῷ νῷ μὴ μετὰ σώματος εἶναι, καθάπερ εἴωθέ
20 τε λέγεσθαι καὶ πολλοῖς συνδοκεῖ. ἄδηλος δὲ καὶ τοῦ 5
κύκλῳ φέρεσθαι τὸν οὐρανὸν ἡ αἰτία· οὔτε γὰρ τῆς ψυχῆς ἡ
οὐσία αἰτία τοῦ κύκλῳ φέρεσθαι, ἀλλὰ κατὰ συμβεβηκὸς
οὕτω κινεῖται, οὔτε τὸ σῶμα αἴτιον, ἀλλ' ἡ ψυχὴ μᾶλλον
21 ἐκείνῳ. ἀλλὰ μὴν οὐδ' ὅτι βέλτιον λέγεται· καίτοι γ' ἐχρῆν
διὰ τοῦτο τὸν θεὸν κύκλῳ ποιεῖν φέρεσθαι τὴν ψυχήν, ὅτι 10
βέλτιον αὐτῇ τὸ κινεῖσθαι τοῦ μένειν, κινεῖσθαι δ' οὕτως ἢ ἄλλως.

ἐπεὶ δ' ἐστὶν ἡ τοιαύτη σκέψις ἑτέρων λόγων οἰκειο-
22 τέρα, ταύτην μὲν ἀφῶμεν τὸ νῦν. ἐκεῖνο δὲ ἄτοπον συμ-
βαίνει καὶ τούτῳ τῷ λόγῳ καὶ τοῖς πλείστοις τῶν περὶ ψυ-
χῆς· συνάπτουσι γὰρ καὶ τιθέασιν εἰς σῶμα τὴν ψυχήν, οὐ- 15
θὲν προσδιορίσαντες διὰ τίν' αἰτίαν καὶ πῶς ἔχοντος τοῦ σώ-
ματος. καίτοι δόξειεν ἂν τοῦτ' ἀναγκαῖον εἶναι· διὰ γὰρ τὴν

22. *νόησις* unc. incl. Torst., sine uncis Biehl Rodier, non legisse videtur Soph. 23, 17, virgulam ante *νόησις* posuit Rodier || *δή τι νοήσει·* Soph. Bek. Trend., *δὴ τί νοήσει;* Simpl. Torst. Biehl Rodier || 23. *γὰρ ποιητικῶν ἢ πρακτ.* S U W X, *ποιητικῶν ἢ* non legisse videntur Them. Philop. (v. tamen Hayducki app. crit. ad 133, 8) Simpl. || 25. *πᾶς ἢ* U y || 26. *αἱ δ' ἀποδείξεις* S T U V W X Bek. Trend., *αἱ μὲν οὖν ἀποδείξεις* y et, ut videtur, Soph. 23, 27, Torst., *ἡ μὲν οὖν ἀπόδειξις* E, sed superscr. *αἱ* et *εις* E_2 (Stapf.) Biehl Rodier || 27. *ἔχουσα* E Biehl Rodier, reliqui et scripti et impressi *ἔχουσι* || 29. *προσαναλαμβάνουσαι* E, sed *ανα* expunct. (Stapf.) Torst., *προσκαταλαμβάνουσαι* y, reliqui *προσλαμβάνουσαι*, etiam Philop. Soph. || 30. *οἵ θ' ὁρ.* coni. Christ || 407 b, 1. *μὴ οὐσία* corrupta putat et coni. *ἡ οὐσία* Torst., *ἡ οὐσία <καὶ>*, vel *<ἔκστασις ἐκ> τῆς οὐσίας*

be mind. But then it will go on thinking of something for ever, for this is required by the eternity of the revolution. To practical thinking there are limits, for it always implies an external end; while speculative thinking is determined in the same way as the logical explanations which express it. Now every explanation consists either in definition or in demonstration. But demonstrations have a premiss for starting-point and reach a kind of goal in the inference or conclusion; while, even if they never reach a conclusion, at all events they do not revert to the starting-point, but with the aid of a succession of middle terms and extremes advance in a straight line. But circular movement returns to the point from which it started. Definitions, too, are all determinate. Besides, if the same revolution recurs again and again, the mind 16 will be obliged to think the same thing again and again. Further, 17 it is a sort of rest or coming to a halt, and not motion, which thinking resembles: and we may say the same of the syllogism. Nor, again, will that which does not move easily, but under con- 18 straint, even realise happiness. •If the motion of soul be not its essence, it will be an unnatural motion. And the entanglement of 19 the mind in the body without the possibility of release is painful; nay, it is to be avoided, if indeed it is really better for mind to be independent of body, a view commonly expressed and widely accepted. Also it is not clear why the heaven revolves in a circle; 20 seeing that circular motion is neither implied by the essence of soul (that form of movement being indeed merely accidental to it), nor due to the body: on the contrary it is rather the soul which causes the motion of the body. Besides, we are not even told that 21 it is better so: yet surely the reason why God made the soul revolve in a circle ought to have been that movement was better for it than rest, and this form of movement better than any other.

But such an enquiry as this belongs more appropriately to a different subject: so let us dismiss it for the present. We may, 22 however, note here another absurdity which is involved in this as in most other theories concerning the soul. They attach the soul to, and enclose it in, body, without further determining why this happens and what is the condition of the body. And yet some such explanation would seem to be required, as it is owing to their relationship that the

Relation between soul and body ignored.

vel *μὴ ἡ οὐσία* coni. Susemihl, ac sane quidem Them. 22, 35 non leg. negationem, leg. *μὴ* Philop. Simpl. Soph. et vet. transl. || 2. *ἂν κινοῖτο* E Simpl., ceteri codd. *κινοῖτ' ἂν* || 9. *γ'* om. E (Trend.) et Torst., etiam Soph. 24, 21 || 10. *ποιεῖν κύκλῳ* S V W y Torst., *κύκλῳ ποιεῖν* etiam Soph. || 14. *τῶν περὶ*, sic omnes codd., etiam E (Trend.) et Them., *τοῖς περὶ* Soph.

κοινωνίαν τὸ μὲν ποιεῖ τὸ δὲ πάσχει καὶ τὸ μὲν κινεῖται τὸ
δὲ κινεῖ, τούτων δ' οὐθὲν ὑπάρχει πρὸς ἄλληλα τοῖς τυχοῦσιν.
23 οἱ δὲ μόνον ἐπιχειροῦσι λέγειν ποῖόν τι ἡ ψυχή, περὶ δὲ τοῦ 20
δεξομένου σώματος οὐθὲν ἔτι προσδιορίζουσιν, ὥσπερ ἐνδεχό-
μενον κατὰ τοὺς Πυθαγορικοὺς μύθους τὴν τυχοῦσαν ψυχὴν εἰς
τὸ τυχὸν ἐνδύεσθαι σῶμα· δοκεῖ γὰρ ἕκαστον ἴδιον ἔχειν εἶ-
δος καὶ μορφήν. παραπλήσιον δὲ λέγουσιν ὥσπερ εἴ τις
φαίη τὴν τεκτονικὴν εἰς αὐλοὺς ἐνδύεσθαι· δεῖ γὰρ τὴν μὲν 25
τέχνην χρῆσθαι τοῖς ὀργάνοις, τὴν δὲ ψυχὴν τῷ σώματι.

4 Καὶ ἄλλη δέ τις δόξα παραδέδοται περὶ ψυχῆς, πι-
θανὴ μὲν πολλοῖς οὐδεμιᾶς ἧττον τῶν λεγομένων, [λόγους δ']
ὥσπερ εὐθύνας <δὲ> δεδωκυῖα καὶ τοῖς ἐν κοινῷ γινομένοις λό-
γοις. ἁρμονίαν γάρ τινα αὐτὴν λέγουσι· καὶ γὰρ τὴν ἁρ- 30
μονίαν κρᾶσιν καὶ σύνθεσιν ἐναντίων εἶναι, καὶ τὸ σῶμα συγ-
2 κεῖσθαι ἐξ ἐναντίων. καίτοι γε ἡ μὲν ἁρμονία λόγος τίς ἐστι
τῶν μειχθέντων ἢ σύνθεσις, τὴν δὲ ψυχὴν οὐδέτερον οἷόν τ'
3 εἶναι τούτων. ἔτι δὲ τὸ κινεῖν οὐκ ἔστιν ἁρμονίας, ψυχῇ δὲ
4 πάντες ἀπονέμουσι τοῦτο μάλισθ' ὡς εἰπεῖν. ἁρμόζει δὲ μᾶλ- **408a**
λον καθ' ὑγιείας λέγειν ἁρμονίαν, καὶ ὅλως τῶν σωματι-
κῶν ἀρετῶν, ἢ κατὰ ψυχῆς. φανερώτατον δ' εἴ τις ἀπο-
διδόναι πειραθείη τὰ πάθη καὶ τὰ ἔργα τῆς ψυχῆς ἁρμο-
5 νίᾳ τινί· χαλεπὸν γὰρ ἐφαρμόζειν. ἔτι δ' εἰ λέγομεν τὴν 5
ἁρμονίαν εἰς δύο ἀποβλέποντες, κυριώτατα μὲν τῶν μεγε-
θῶν ἐν τοῖς ἔχουσι κίνησιν καὶ θέσιν τὴν σύνθεσιν αὐτῶν, ἐπει-
δὰν οὕτω συναρμόζωσιν ὥστε μηδὲν συγγενὲς παραδέχεσθαι,
ἐντεῦθεν δὲ καὶ τὸν τῶν μεμειγμένων λόγον, οὐδετέρως μὲν οὖν
εὔλογον, ἡ δὲ σύνθεσις τῶν τοῦ σώματος μερῶν λίαν εὐεξέ- 10

18. *ποιεῖ τι τὸ* S T V W X ‖ 24. *καὶ*] *σῶμα καὶ* e solo E scripsit Biehl, ceteri scripti et impressi om. *σῶμα*, etiam Simpl. Philop. 139, 26 sqq. ‖ *δὴ* S X, *δή τι* T V W et Them. ‖ 27. de loco 27...408 a, 29. cf. Bon., Hermes VII, p. 428 sqq. ‖ 28. *πολλοῖς καὶ οὐδεμιᾶς* T W pr. y Soph. ‖ *ἥττων* T V W X y et corr. S Soph. v. l. (*ἧττον* e codd. Hayduck, 25, 5), *πιθανὴ μὲν οὐδεμιᾶς ἧσσον* Them. ‖ *λόγοις* V, *λόγον* coni. Torst., *λόγον δ' ὥσπερ καὶ* coni. Bergk, Hermes XVIII, 518, *λόγον δὲ καὶ ὥσπερ* Susemihl, *λόγους δ'* omittendum censet Bernays, die Dialoge des Arist. p. 15, cui assentiuntur Haecker (Zeitschr. f. Gym. 1864, p. 204) et Bonitz (Hermes VII, p. 429), unc. inclusi, *λόγους* leg. Philop. Soph., non legisse videtur Them. ‖ 29. <*δὲ*> e Bernaysii coniectura scripsi ‖ *γινομένοις λόγοις*] sic etiam Simpl., *λεγομένοις λόγοις* W Philop. in interpr. 145, 22, *λεγομένοις* S ‖ 30. *αὐτήν τινες* V W y, *τινες* etiam Them. et Philop. 141, 31 legisse videntur ‖ 32. *γε* om. E Soph. Torst. ‖ 408 a, 1. *ἀπονέμουσιν ἅπαντες τοῦτο* S T V W y, *ἅπαντες ἀπ. τ.* X, *πάντες* etiam Soph. ‖ 3. *φανερωτάτων* E, *φανερώτατον* corr. E_2 (Stapf.) ‖ 5. *λέγομεν* pr. E (Trend.)

one acts, the other is acted upon, that the one is moved, and the other causes it to move; and between two things taken at random no such mutual relations exist. The supporters of such 23 theories merely undertake to explain the nature of the soul. Of the body which is to receive it they have nothing more to say: just as if it were possible for any soul taken at random, according to the Pythagorean stories, to pass into any body. This is absurd, for each body appears to have a distinctive form or shape of its own. It is just like talking of a transmigration of carpentry into flutes: for the craft must employ the right tools and the soul the right body.

There is yet another opinion concerning soul which has come 4 down to us, commending itself to many minds as readily as any that is put forward, although it has been severely criticised even in the popular discussions of the present day. The soul is asserted to be a kind of harmony, for harmony is on this view a blending or combining of opposites, and the components of the body are opposites. And yet this 2 harmony must mean either a certain proportion in the components or else the combining of them; and the soul cannot possibly be either of these. Furthermore, to cause motion is no attribute of 3 a harmony: yet this function more than any other is all but universally assigned to soul. Again, it is more in harmony with 4 the facts to apply the term harmony to health or bodily excellence generally than to soul, as is very clearly seen when we try to assign to a harmony of whatever kind the affections or functions of the soul: it is difficult to harmonise them.

The theory of harmony.

Further, if we use the word harmony with a twofold appli- 5 cation; first, and in its most natural sense, of those magnitudes which have motion and position, to denote the combining of them into a whole, when they are so closely fitted together that they do not admit between them anything of the same kind; and then in a secondary sense to denote the proportion subsisting between the components of a mixture: in neither sense is it reasonable to call soul a harmony. The view which regards it as a combining of the parts of the body is singularly

Two meanings of the term harmony.

S T V X et, ut videtur, Soph. 25, 34, Torst. Bon., stud. Arist. II, III. p. 61, ἔτι δὲ λέγομεν Madvig 471, reliqui ante Torst. omnes λέγοιμεν || 8. συνγενέσθαι E, μηδὲν μὴ συγγενὲς coni. Steinhart, μηδὲν <μήτε συγγενὲς μήτε μὴ> συγγενὲς coni. Susemihl, Burs. Jahrb. XVII, 261, vulgat. leg. interpretes, etiam Alex. De an. 25, 10 || 9. post λόγον punctum Bek., colon Torst., virgulam Trend.

ταστος. πολλαί τε γὰρ αἱ συνθέσεις τῶν μερῶν καὶ πολλα-
χῶς· τίνος οὖν ἢ πῶς ὑπολαβεῖν τὸν νοῦν χρὴ σύνθεσιν εἶναι,
6 ἢ καὶ τὸ αἰσθητικὸν ἢ ὀρεκτικόν; ὁμοίως δὲ ἄτοπον καὶ <τὸ> τὸν
λόγον τῆς μείξεως εἶναι τὴν ψυχήν· οὐ γὰρ τὸν αὐτὸν ἔχει
λόγον ἡ μεῖξις τῶν στοιχείων καθ' ἣν σὰρξ καὶ καθ' ἣν ὀστοῦν· 15
συμβήσεται οὖν πολλάς τε ψυχὰς ἔχειν καὶ κατὰ πᾶν τὸ
σῶμα, εἴπερ πάντα μὲν ἐκ τῶν στοιχείων μεμειγμένων, ὁ δὲ
7 τῆς μείξεως λόγος ἁρμονία καὶ ψυχή. ἀπαιτήσειε δ' ἄν τις
τοῦτό γε καὶ παρ' Ἐμπεδοκλέους· ἕκαστον γὰρ αὐτῶν λόγῳ
τινί φησιν εἶναι· πότερον οὖν ὁ λόγος ἐστὶν ἡ ψυχή, ἢ μᾶλ- 20
λον ἕτερόν τι οὖσα ἐγγίνεται τοῖς μέλεσιν; ἔτι δὲ πότερον ἡ
φιλία τῆς τυχούσης αἰτία μείξεως ἢ τῆς κατὰ τὸν λόγον; καὶ
αὕτη πότερον ὁ λόγος ἐστὶν ἢ παρὰ τὸν λόγον ἕτερόν τι;
8 ταῦτα μὲν οὖν ἔχει τοιαύτας ἀπορίας. εἰ δ' ἐστὶν ἕτερον ἡ
ψυχὴ τῆς μείξεως, τί δή ποτε ἅμα τῷ σαρκὶ εἶναι ἀναι- 25
ρεῖται καὶ τῷ τοῖς ἄλλοις μορίοις τοῦ ζῴου; πρὸς δὲ τούτοις εἴπερ
μὴ ἕκαστον τῶν μορίων ψυχὴν ἔχει, εἰ μή ἐστιν ἡ ψυχὴ ὁ λόγος
τῆς μείξεως, τί ἐστιν ὃ φθείρεται τῆς ψυχῆς ἀπολειπούσης;

ὅτι μὲν οὖν οὔθ' ἁρμονίαν οἷόν τ' εἶναι τὴν ψυχὴν
9 οὔτε κύκλῳ περιφέρεσθαι, δῆλον ἐκ τῶν εἰρημένων. κατὰ 30
συμβεβηκὸς δὲ κινεῖσθαι, καθάπερ εἴπομεν, ἔστι καὶ κι-
νεῖν ἑαυτήν, οἷον κινεῖσθαι μὲν ἐν ᾧ ἐστί, τοῦτο δὲ κινεῖσθαι
ὑπὸ τῆς ψυχῆς· ἄλλως δ' οὐχ οἷόν τε κινεῖσθαι κατὰ τόπον
10 αὐτήν. εὐλογώτερον δ' ἀπορήσειεν ἄν τις περὶ αὐτῆς ὡς κι-
νουμένης, εἰς τὰ τοιαῦτα ἀποβλέψας. φαμὲν γὰρ τὴν ψυ- 408b
χὴν λυπεῖσθαι χαίρειν, θαρρεῖν φοβεῖσθαι, ἔτι δὲ ὀργί-
ζεσθαί τε καὶ αἰσθάνεσθαι καὶ διανοεῖσθαι· ταῦτα δὲ πάν-
τα κινήσεις εἶναι δοκοῦσιν. ὅθεν οἰηθείη τις ἂν αὐτὴν κινεῖσθαι·
11 τὸ δ' οὐκ ἔστιν ἀναγκαῖον. εἰ γὰρ καὶ ὅτι μάλιστα τὸ λυπεῖ- 5

11. αἱ om. T V || μερῶν] πολλῶν nunc E, subfuisse videtur μερῶν (Stapf.) || 12. χρὴ τὸν νοῦν S T V W y || 13. καὶ τὸ λόγον V X, quod probat Bon., stud. Arist. I. p. 97, adn. 1, καὶ τὸ τὸν λόγον Soph., quod in textum receperunt Biehl Rodier, malunt etiam Torst. et Bon., stud. Arist. II, III. p. 61, reliqui καὶ τὸν λόγον || 15. post ὀστοῦν punctum vulg., colon posuit Diels || 18. ἀπαιτήσειε...28. ἀπολειπούσης in parenth. Torst. || 19. αὐτῶν ἐν λόγῳ W y Soph. || 21. μέρεσιν pr. E W et, ut videtur, y Torst. Biehl Rodier, μέλεσιν rc. E S T U V Bek. Trend. Diels, p. 175, μιχθεῖσιν X Philop. 150, 11 Soph. || 26. τὸ T et in interpr. Philop. Simpl. Chaignet, Essai sur la psych. d'Ar. p. 246, adn. 2, Susemihl, om. S V W, τῷ in interpr. etiam Them. Soph. || 27. μὴ prius delendum esse censet Chaignet, at Simplicium vulgat. non legisse ex interpr. 56, 18 sqq. parum constat. || 28. τί ἐστιν ὃ φθείρεται videntur corrupta Torst., tuentur haec verba praeter omnes codd. Them. Philop.

open to criticism. For there are many combinings of the parts, and they combine in many ways. What part, then, is that whose combining with the rest we must assume to be the intellect, and in what way does it combine? Or again, what of the sensitive and appetitive faculties? But it is equally absurd to regard the soul 6 as the proportion determining the mixture. For the elements are not mixed in the same proportion in flesh as in bone. Thus it will follow that there are many souls, and that, too, all over the body, if we assume that all members consist of the elements variously commingled and that the proportion determining the mixture is a harmony, that is, soul. This is a question we might 7

Empedocles.

ask Empedocles; who says that each of the parts is determined by a certain proportion. Is the soul, then, this proportion, or is it rather developed in the frame as something distinct? And, further, is it a mixture at random or a mixture in the right proportion which he ascribes to Love: and, if the latter, is Love the proportion itself or something other than the proportion and distinct from it? Such, then, are the difficulties involved in this view. On the other hand, if soul is something distinct from 8

Difficulties involved in rejecting the theory.

the mixture, how comes it that it is destroyed simultaneously with the disappearance of the quiddity of the flesh and of the other parts of the animal? And, further, assuming that each of the separate parts has not a soul of its own, unless the soul be the proportion of their admixture, what is it that perishes when the soul quits the body?

Conclusion.

From what has been said it is clear that the soul cannot be a harmony and cannot revolve in a circle. But inci- 9 dentally it can, as we have seen, move and set itself in motion: for instance, the body in which it is may move, and be set in motion by the soul: otherwise it cannot possibly move from place to place. The question whether the soul is moved would 10

Objection stated and answered.

more naturally arise in view of such facts as the following. The soul is said to feel pain and joy, confidence and fear, and again to be angry, to perceive and to think; and all these states are held to be movements: which might lead one to infer that soul itself is moved. But this is no 11 necessary inference. For suppose it ever so true that to feel pain

Soph., egregie totum hunc locum explicavit Bon., Hermes VII, p. 435 || δ] ᾧ coni. Barco, assentitur Susemihl, Oecon. p. 84 || ἀπολιπούσης T V X y Them., ἀπολειπούσης in paraphr. Simpl. Philop. 153, 4 Soph. v. l. (ἀπολιπούσης e codd. Hayduck 26, 37) || 408 b, 3. τε om. V || 5. de hoc loco εἰ γὰρ... 11. τὸ δὴ vide Bon., stud. Arist. II, III. p. 22 sqq., quem in textu restituendo secutus est Biehl, etiam Rodier, nisi quod a verbis b, 9. τούτων δὲ parenth. incipere maluit Rodier.

σθαι ἢ χαίρειν ἢ διανοεῖσθαι κινήσεις εἰσὶ καὶ ἕκαστον κι-
νεῖσθαι τούτων, τὸ δὲ κινεῖσθαί ἐστιν ὑπὸ τῆς ψυχῆς, οἷον τὸ
ὀργίζεσθαι ἢ φοβεῖσθαι τὸ τὴν καρδίαν ὡδὶ κινεῖσθαι, τὸ
δὲ διανοεῖσθαι ἢ τὸ τοῦτο ἴσως ἢ ἕτερόν τι, τούτων δὲ συμ-
βαίνει τὰ μὲν κατὰ φορὰν τινῶν κινουμένων, τὰ δὲ κατ' 10
12 ἀλλοίωσιν (ποῖα δὲ καὶ πῶς, ἕτερός ἐστι λόγος)· τὸ δὴ λέ-
γειν ὀργίζεσθαι τὴν ψυχὴν ὅμοιον κἂν εἴ τις λέγοι τὴν ψυ-
χὴν ὑφαίνειν ἢ οἰκοδομεῖν· βέλτιον γὰρ ἴσως μὴ λέγειν τὴν
ψυχὴν ἐλεεῖν ἢ μανθάνειν ἢ διανοεῖσθαι, ἀλλὰ τὸν ἄνθρω-
πον τῇ ψυχῇ· τοῦτο δὲ μὴ ὡς ἐν ἐκείνῃ τῆς κινήσεως οὔσης, 15
ἀλλ' ὁτὲ μὲν μέχρι ἐκείνης, ὁτὲ δ' ἀπ' ἐκείνης, οἷον ἡ μὲν
αἴσθησις ἀπὸ τωνδί, ἡ δ' ἀνάμνησις ἀπ' ἐκείνης ἐπὶ τὰς ἐν
13 τοῖς αἰσθητηρίοις κινήσεις ἢ μονάς. ὁ δὲ νοῦς ἔοικεν ἐγγίνεσθαι
οὐσία τις οὖσα, καὶ οὐ φθείρεσθαι. μάλιστα γὰρ ἐφθείρετ' ἂν
ὑπὸ τῆς ἐν τῷ γήρᾳ ἀμαυρώσεως, νῦν δ' ἴσως ὅπερ ἐπὶ 20
τῶν αἰσθητηρίων συμβαίνει· εἰ γὰρ λάβοι ὁ πρεσβύτης ὄμμα
τοιονδί, βλέποι ἂν ὥσπερ καὶ ὁ νέος. ὥστε τὸ γῆρας οὐ
τῷ τὴν ψυχήν τι πεπονθέναι, ἀλλ' ἐν ᾧ, καθάπερ ἐν μέ-
14 θαις καὶ νόσοις. καὶ τὸ νοεῖν δὴ καὶ τὸ θεωρεῖν μαραίνεται
ἄλλου τινὸς ἔσω φθειρομένου, αὐτὸ δὲ ἀπαθές ἐστιν. τὸ δὲ δια- 25
νοεῖσθαι καὶ φιλεῖν ἢ μισεῖν οὐκ ἔστιν ἐκείνου πάθη, ἀλλὰ τουδὶ
τοῦ ἔχοντος ἐκεῖνο, ᾗ ἐκεῖνο ἔχει. διὸ καὶ τούτου φθειρο-
μένου οὔτε μνημονεύει οὔτε φιλεῖ· οὐ γὰρ ἐκείνου ἦν, ἀλλὰ τοῦ
κοινοῦ, ὃ ἀπόλωλεν· ὁ δὲ νοῦς ἴσως θειότερόν τι καὶ ἀπαθές ἐστιν.

15 ὅτι μὲν οὖν οὐχ οἷόν τε κινεῖσθαι τὴν ψυχήν, φανερὸν 30
ἐκ τούτων· εἰ δ' ὅλως μὴ κινεῖται, δῆλον ὡς οὐδ' ὑφ' ἑαυτῆς.
16 πολὺ δὲ τῶν εἰρημένων ἀλογώτατον τὸ λέγειν ἀριθμὸν εἶναι
τὴν ψυχὴν κινοῦνθ' ἑαυτόν· ὑπάρχει γὰρ αὐτοῖς ἀδύνατα

7. pro δὲ coni. δή, quod probat Essen, et a verbis τὸ δὴ apodosin incipere vult Susemihl || 8. τὸ τὴν κ. V Bon., reliqui ante Bon. omnes τῷ τὴν κ. || 9. ἢ τοιοῦτον libri scripti et ante Biehlium impressi omnes, etiam Philop., ἢ τῷ τοῦτο coni. Torst., ἢ τὸ τοῦτο coni. Bon., quod recepit Biehl || τούτων...11. λόγος in parenth. Susemihl, Burs. Jahrb. IX, 351 Rodier || 11. ποῖαι E, litera ι inserta quidem sed aperte a prima manu (Trend.), etiam Philop. || (ποῖα...λόγος) in parenth. Bon. || τὸ δὴ S T Bon., qui ab his verbis apodosin incipit ad 5. εἰ γάρ, quod iam Philop. diserte fecerat 156, 10 sq., τὸ δὲ reliqui ante Bon. omnes, etiam Philop. || 15. οὔσης om. pr. E, sed ab antiqua manu insertum (Trend.) || 16. μέχρις T V W X Philop. || 18. ὁ δὲ...29. ἐστιν alieno loco inserta censet B. Ritter, Grundprinc. d. Arist. Seelenl. p. 29, cui assentitur Susemihl || 19. οὖσα om. pr. E, sed ab antiqua manu insertum (Trend.), leg. etiam Them. Philop. (excepto Philop. cod. D) || 20. νυνὶ δ' ὥσπερ S T V W X y, ὥσπερ etiam Soph., νῦν δὲ ὅπερ Them. 29, 26 ||

or joy and to think are movements, that to experience each of these is to be moved and that the movement is due to the soul: suppose that to be angry, for instance, or to be afraid means a particular movement of the heart, and that to think means a movement of this or of some other part, some of these movements being movements of locomotion, others of qualitative change (of what sort and how produced does not concern us here): yet, 12 even then, to speak of the soul as feeling anger is as if one should say that the soul weaves or builds. Doubtless it would be better not to say that the soul pities or learns or thinks, but that the man does so with the soul: and this, too, not in the sense that the motion occurs in the soul, but in the sense that motion sometimes reaches to, sometimes starts from, the soul. Thus, sensation originates in particular objects, while recollection, starting from the soul, is directed towards the movements or traces of movements in the sense-organs. But intellect would seem to be developed 13 in us as a self-existing substance and to be imperishable. For, if anything could destroy it, it would be the feebleness of age. But, as things are, no doubt what occurs is the same as in the case of the sense-organs. If an aged man could procure an eye of the right sort, he would see just as well as a young man. Hence old age must be due to an affection or state not of the soul as such, but of that in which the soul resides, just as is the case in intoxication and disease. In like manner, then, thought 14 and the exercise of knowledge are enfeebled through the loss of something else within, but are in themselves impassive. But reasoning, love and hatred are not attributes of the thinking faculty but of its individual possessor, in so far as he possesses it. Hence when this possessor perishes, there is neither memory nor love: for these never did belong to the thinking faculty, but to the composite whole which has perished, while the intellect is doubtless a thing more divine and is impassive.

Intellect: impassive and imperishable.

From the foregoing it is clear that the soul is incapable of 15 motion; and, if it is not moved at all, clearly it does not move itself. Now of all the views that have been put forward 16 by far the most irrational is that which makes the soul a self-moving number. Its supporters are involved in

Criticism in detail of the self-moving number.

22. E superscr. οἷον νέος post τοιονδί est interpretamentum (Bhl.) || 23. πεπονθέναι τι τὴν ψυχήν VWy Philop., τὴν ψυχὴν πεπονθέναι S Them. 29, 29 || 25. ἔσω] ἔξω coni. Steinhart, ἐν ᾧ coni. Bon., cf. Susemihl, Burs. Jahr. XVII, 264, adn. 24, ἔσω tuentur etiam Simpl. p. 60, 30 Philop. Soph., εἴσω Them. 29, 30 et 30, 14, ἔσω retineri volunt etiam Zeller, Gesch. d. Ph. d. Gr. II, 2, p. 570 et Neuhäuser, Arist. Lehre von dem sinnl. Erkenntnissvermögen, p. 12.

πρῶτα μὲν τὰ ἐκ τοῦ κινεῖσθαι συμβαίνοντα, ἴδια δ' ἐκ τοῦ
λέγειν αὐτὴν ἀριθμόν. πῶς γὰρ χρὴ νοῆσαι μονάδα κινου- 409a
μένην, καὶ ὑπὸ τίνος, καὶ πῶς, ἀμερῆ καὶ ἀδιάφορον οὖ-
17 σαν; εἰ γάρ ἐστι κινητικὴ καὶ κινητή, διαφέρειν δεῖ. ἔτι δ'
ἐπεί φασι κινηθεῖσαν γραμμὴν ἐπίπεδον ποιεῖν, στιγμὴν δὲ
γραμμήν, καὶ αἱ τῶν μονάδων κινήσεις γραμμαὶ ἔσονται· 5
ἡ γὰρ στιγμὴ μονάς ἐστι θέσιν ἔχουσα· ὁ δ' ἀριθμὸς τῆς
18 ψυχῆς ἤδη πού ἐστι καὶ θέσιν ἔχει. ἔτι δ' ἀριθμοῦ μὲν ἐὰν
ἀφέλῃ τις ἀριθμὸν ἢ μονάδα, λείπεται ἄλλος ἀριθμός·
τὰ δὲ φυτὰ καὶ τῶν ζῴων πολλὰ διαιρούμενα ζῇ καὶ δο-
19 κεῖ τὴν αὐτὴν ψυχὴν ἔχειν τῷ εἴδει. δόξειε δ' ἂν οὐθὲν δια- 10
φέρειν μονάδας λέγειν ἢ σωμάτια μικρά· καὶ γὰρ ἐκ τῶν
Δημοκρίτου σφαιρίων ἐὰν γένωνται στιγμαί, μόνον δὲ μένῃ
τὸ ποσόν, ἔσται τι ἐν αὐτῷ τὸ μὲν κινοῦν τὸ δὲ κινούμενον,
ὥσπερ ἐν τῷ συνεχεῖ· οὐ γὰρ διὰ τὸ μεγέθει διαφέρειν ἢ
μικρότητι συμβαίνει τὸ λεχθέν, ἀλλ' ὅτι ποσόν. διὸ ἀναγ- 15
καῖον εἶναί τι τὸ κινῆσον τὰς μονάδας. εἰ δ' ἐν τῷ ζῴῳ τὸ
κινοῦν ἡ ψυχή, καὶ ἐν τῷ ἀριθμῷ, ὥστε οὐ τὸ κινοῦν καὶ τὸ
20 κινούμενον ἡ ψυχή, ἀλλὰ τὸ κινοῦν μόνον. ἐνδέχεται δὲ δὴ
πῶς μονάδα ταύτην εἶναι; δεῖ γὰρ ὑπάρχειν τινὰ αὐτῇ
διαφορὰν πρὸς τὰς ἄλλας. στιγμῆς δὲ μοναδικῆς τίς ἂν εἴη 20
διαφορὰ πλὴν θέσις; εἰ μὲν οὖν εἰσὶν ἕτεραι αἱ ἐν τῷ σώματι
μονάδες καὶ αἱ στιγμαί, ἐν τῷ αὐτῷ ἔσονται αἱ μονάδες·
καθέξει γὰρ χώραν στιγμῆς. καίτοι τί κωλύει ἐν τῷ αὐτῷ
εἶναι, εἰ δύο, καὶ ἀπείρους; ὧν γὰρ ὁ τόπος ἀδιαίρετος,
21 καὶ αὐτά. εἰ δ' αἱ ἐν τῷ σώματι στιγμαὶ ὁ ἀριθμὸς ὁ τῆς 25
ψυχῆς, ἢ εἰ ὁ τῶν ἐν τῷ σώματι στιγμῶν ἀριθμὸς ἡ
ψυχή, διὰ τί οὐ πάντα ψυχὴν ἔχουσι τὰ σώματα; στιγμαὶ

34. *ἴδια* E (Bus.) Simpl. p. 65, 17 Soph. et, ut videtur, Philop. 165, 31, receperunt Biehl Rodier, *ἰδίᾳ* reliqui et scripti et ante Biehlium impressi omnes, etiam Them., *ἴδια* defendit Vahlen in ed. art. poet. tert. 119 ‖ 409 a, 3. *εἰ γὰρ*] *ἢ γὰρ* T, *ἢ γὰρ* X, *ἢ μὲν γὰρ* Soph. 29, 21 ‖ 10. *αὐτὴν* om. E ‖ *ἔχειν ψυχὴν* S T U V y Them. ‖ 11. *σμικρά* S T Them., *μικρά* etiam Soph. ‖ 12. *σφαιρῶν* T X et rc. E, *σφαιρίων* reliqui codd. et, ut videtur, pr. E (Trend.) ‖ 13. *αὐτῷ*] *αὐταῖς* Soph. 30, 9 ‖ post *κινούμενον* virgulam delevit Torst. ‖ 14. *συνεχεῖ*] *μεγέθει* T W y Soph. ‖ 15. *σμικρότητι* plerique codd., etiam Them. Soph., *μικρότητι* E (Stapf.) Bek. Trend. Torst. ‖ 16. *κινῆσαν* T W y, *κινῆσον* etiam Soph. ‖ 17. *ὥστε*] *πρώτως γε* coni. Essen ‖ *τὸ* post *καὶ* om. S U W X y ‖ 18. *δὲ* om. S V W X y, leg. Them. ‖ 19. *πῶς* Them. Trend. Torst., *πως* (enclit.) et post *εἶναι* colon Bek. ‖ *ταύτην*] *αὐτὴν* T X, etiam Philop. 168, 16 ‖ 22. *καὶ αἱ*] *καὶ* S U V W y, *ἢ* T et rc. E, *καὶ αἱ* pr. E (Trend.), *ἕτεραι αἱ ἐν τῷ σώματι στιγμαὶ καὶ αἱ μονάδες* coni. Christ ‖ 23. *κωλύσει* V W Them. Trend., *κωλύει*

many impossibilities, not only in those which arise from attributing motion to the soul, but also in others of a special character due to calling it a number. For how are we to conceive of a unit, a thing which is without parts or differences, as in motion? By what would it be moved, and in what way? For if it is capable of imparting motion as well as of being moved, it must admit differences. (x) Further, since they say that a line by its motion generates a surface and that a point by its motion generates a line, the movements of the units will also be lines, for a point is a unit having position. (17) But the number of the soul must, from the nature of the case, be somewhere and have position. Again, if you subtract a number or unit from a number, a different number remains: whereas plants and many animals continue to live when divided and seem to have specifically the same soul in each segment. (18) Besides, it would seem to make no difference whether we say units or tiny particles. (19) For if the little round atoms of Democritus be converted into points and only their sum-total be retained, in such sum-total there will still be a part which moves and a part which is moved, just as there is in that which is extended. The truth of this statement does not depend upon the size of the atoms, whether great or small, but upon the fact that there is a sum-total or quantity of them. Hence there must be something to set the units in motion. But if in the animal the part which causes motion is the soul, then it is so likewise in the number: so that it will not be both that which causes motion and that which is moved which is the soul, but that which causes motion only. How then can this cause of motion be a unit? (20) For if it were so there must be some difference between it and the other units. But what is there to differentiate points which are units, except position? If, then, the units, that is the points, in the body are distinct from the units of soul, the units of soul will be in the same place as the points, for each unit will occupy the space of a point. And yet if two things can be in the same place, why not an infinite number? When the place which things occupy is indivisible, the things themselves are also indivisible. If, on the other hand, the number of the soul consists of the points in the body, or if the soul is the number of such points, why are not all bodies possessed of soul? (21) For in all bodies there

etiam Simpl. Soph. || 25. ὁ prius om. X, alterum insert. E_2 || 26. ὁ τῶν E Them. Philop. 171, 12 Simpl. Soph., recepit Biehl, ceteri et scripti et ante Biehlium impressi omnes ὁ ἐκ τῶν, etiam Philop. in lemmate 171, 6, ἐκ insert. E_2.

22 γὰρ ἐν ἅπασι δοκοῦσιν εἶναι καὶ ἄπειροι. ἔτι δὲ πῶς οἷόν τε
χωρίζεσθαι τὰς στιγμὰς καὶ ἀπολύεσθαι τῶν σωμάτων, εἴ
γε μὴ διαιροῦνται αἱ γραμμαὶ εἰς στιγμάς; 30

5 Συμβαίνει δέ, καθάπερ εἴπομεν, τῇ μὲν ταὐτὸ λέγειν
τοῖς σῶμά τι λεπτομερὲς αὐτὴν τιθεῖσι, τῇ δ', ὥσπερ Δη-
μόκριτος κινεῖσθαί φησιν ὑπὸ τῆς ψυχῆς, ἴδιον τὸ ἄτοπον. 409b
εἴπερ γάρ ἐστιν ἡ ψυχὴ ἐν παντὶ τῷ αἰσθανομένῳ σώματι,
ἀναγκαῖον ἐν τῷ αὐτῷ δύο εἶναι σώματα, εἰ σῶμά τι ἡ
ψυχή· τοῖς δ' ἀριθμὸν λέγουσιν, ἐν τῇ μιᾷ στιγμῇ πολ-
λὰς στιγμάς, ἢ πᾶν σῶμα ψυχὴν ἔχειν, εἰ μὴ διαφέρων 5
τις ἀριθμὸς ἐγγίνεται καὶ ἄλλος τις τῶν ὑπαρχουσῶν ἐν
2 τοῖς σώμασι στιγμῶν. συμβαίνει τε κινεῖσθαι τὸ ζῷον ὑπὸ
τοῦ ἀριθμοῦ, καθάπερ καὶ Δημόκριτον αὐτὸ ἔφαμεν κινεῖν·
τί γὰρ διαφέρει σφαίρας λέγειν μικρὰς ἢ μονάδας μεγά-
λας, ἢ ὅλως μονάδας φερομένας; ἀμφοτέρως γὰρ ἀναγ- 10
3 καῖον κινεῖν τὸ ζῷον τῷ κινεῖσθαι ταύτας. τοῖς δὴ συμπλέ-
ξασιν εἰς τὸ αὐτὸ κίνησιν καὶ ἀριθμὸν ταῦτά τε συμβαίνει
καὶ πολλὰ ἕτερα τοιαῦτα· οὐ γὰρ μόνον ὁρισμὸν ψυχῆς
ἀδύνατον τοιοῦτον εἶναι, ἀλλὰ καὶ συμβεβηκός. δῆλον δ' εἴ
τις ἐπιχειρήσειεν ἐκ τοῦ λόγου τούτου τὰ πάθη καὶ τὰ ἔργα 15
τῆς ψυχῆς ἀποδιδόναι, οἷον λογισμούς, αἰσθήσεις, ἡδονάς,
λύπας, ὅσα ἄλλα τοιαῦτα· ὥσπερ γὰρ εἴπομεν πρότερον,
οὐδὲ μαντεύσασθαι ῥᾴδιον ἐξ αὐτῶν.

4 τριῶν δὲ τρόπων παραδεδομένων καθ' οὓς ὁρίζονται τὴν ψυ-
χήν, οἱ μὲν τὸ κινητικώτατον ἀπεφήναντο τῷ κινεῖν ἑαυτό, οἱ δὲ 20
σῶμα τὸ λεπτομερέστατον ἢ τὸ ἀσωματώτατον τῶν ἄλλων.
ταῦτα δὲ τίνας ἀπορίας τε καὶ ὑπεναντιώσεις ἔχει, διεληλύθα-
5 μεν σχεδόν. λείπεται δ' ἐπισκέψασθαι πῶς λέγεται τὸ ἐκ τῶν

29. *ψυχὰς* S T U, *στιγμὰς* E (Bus.) et V W X y Soph. vet. transl. et, ut videtur, Philop. 171, 21, Torst. || 30. *γε* om. E || *εἰς τὰς στ.* T W || 31. falso hic incipitur novum caput || *δὲ καὶ καθ.* E, pro *δὲ* coni. *δὴ* Susemihl || 409 b, 1. *ἴδιον* om. S, *τὸ* om. X, verba *ἴδιον τὸ ἄτοπον* unc. incl. Torst., legerunt Philop. et sine dubio Them. et Simpl., tuetur Vahlen in ed. art. poet. tert. 119, non legisse videtur Soph. 31, 6 || 2. *περ* om. pr. E || *σώματι* om. W y, leg. Philop. Soph. || 5. pro *ἢ* coni. Torst. *καί*, *ἢ* in interpr. Simpl. Philop. 172, 25 sqq., defendit *ἢ* Dittenberger, Gött. gelehrte Anz. 1863, p. 1615 || 7. *τοῖς σώμασι* E Torst., reliqui ante Torst. omnes *τῷ σώματι* || *συμβαίνῃ* E (Bek.), *συμβαίνει* E (Bus.) || *τε*] *δὲ* U X, om. S. || 8. *αὐτὸ ἔφαμεν* E X, receperunt Biehl Rodier, *ἔφαμεν αὐτὸ* reliqui et scripti et impressi || 9. *μικρὰς* E (Bus.) y, reliqui ante Biehlium omnes *σμικρὰς* || 11. *ταύτας* E Soph. Bek. Torst. Biehl Rodier, reliqui *αὐτάς*. || 18. *μαντεύεσθαι* S T U V W y,

would seem to be points: nay, an infinity of points. And, further, 22 how can the points be separated and set free from the bodies to which they belong; unless, indeed, we are prepared to resolve lines into points?

It comes to this, then, as we have said, first, that this view 5 coincides with that which makes of the soul a body composed of fine particles; next, that its agreement with Democritus as to the manner in which he makes the body to be moved by the soul gives it an especial absurdity of its own. If the soul resides in the whole sentient body, on the assumption that the soul is a sort of body it necessarily follows that two bodies occupy the same space. Those who call the soul a number have to assume many points in the one point, or else that everything corporeal has a soul; unless the number that comes to exist in the body is a different number, quite distinct from the sum of the points already present in the body. Hence it 2 follows that the animal is moved by the number in the same way precisely as we said Democritus moved it. For what difference does it make whether we speak of small round atoms or large units, or indeed of units in spatial motion at all? Either way it is necessary to make the motion of the animal depend on the motion of these atoms or units. Such, then, are some of the difficulties 3 confronting those who join motion and number: and there are many others, since it is impossible that the conjunction of motion with number should form even an attribute, much less the definition, of soul. This will be evident if we try to deduce from this definition the affections and functions of the soul; its reasonings, perceptions, pleasures, pains, and so forth. For, as we said above, from the account given it is difficult even to divine what these functions are.

The objections recapitulated.

Three modes of defining the soul have come down to us: 4 some defined it as that which, in virtue of its self-motion, is most capable of causing motion; others as the body which consists of the finest particles, or which is more nearly incorporeal than anything else. And we have pretty fully explained what difficulties and inconsistencies these views present. It remains to consider 5 what is meant by saying that the soul is composed of the

μαντεύσασθαι etiam Them. Soph. et, ut videtur, Philop. 175, 1 || 20. *οἱ μὲν*...23. *σχεδὸν* in parenth. et post 21. *ἄλλων* colon pro vulg. punct. posuit Rodier || 20. *ἑαυτό*] *ἑαυτὴν* Soph. || 22. *τε* om. V W Philop.

στοιχείων αὐτὴν εἶναι. λέγουσι μὲν γάρ, ἵν' αἰσθάνηταί τε
τῶν ὄντων καὶ ἕκαστον γνωρίζῃ, ἀναγκαῖον δὲ συμβαίνειν 25
πολλὰ καὶ ἀδύνατα τῷ λόγῳ. τίθενται γὰρ γνωρίζειν τῷ
ὁμοίῳ τὸ ὅμοιον, ὥσπερ ἂν εἰ τὴν ψυχὴν τὰ πράγματα
τιθέντες. οὐκ ἔστι δὲ μόνα ταῦτα, πολλὰ δὲ καὶ ἕτερα,
6 μᾶλλον δ' ἴσως ἄπειρα τὸν ἀριθμὸν τὰ ἐκ τούτων. ἐξ ὧν
μὲν οὖν ἐστὶν ἕκαστον τούτων, ἔστω γινώσκειν τὴν ψυχὴν καὶ 30
αἰσθάνεσθαι· ἀλλὰ τὸ σύνολον τίνι γνωριεῖ ἢ αἰσθήσεται,
οἷον τί θεὸς ἢ ἄνθρωπος ἢ σὰρξ ἢ ὀστοῦν; ὁμοίως δὲ καὶ
ἄλλο ὁτιοῦν τῶν συνθέτων· οὐ γὰρ ὁπωσοῦν ἔχοντα τὰ 410a
στοιχεῖα τούτων ἕκαστον, ἀλλὰ λόγῳ τινὶ καὶ συνθέσει, καθά-
περ φησὶ καὶ Ἐμπεδοκλῆς τὸ ὀστοῦν·

> ἡ δὲ χθὼν ἐπίηρος ἐν εὐστέρνοις χοάνοισιν
> τὼ δύο τῶν ὀκτὼ μερέων λάχε νήστιδος αἴγλης, 5
> τέσσαρα δ' Ἡφαίστοιο· τὰ δ' ὀστέα λευκὰ γένοντο.

οὐδὲν οὖν ὄφελος ἐνεῖναι τὰ στοιχεῖα ἐν τῇ ψυχῇ, εἰ μὴ καὶ οἱ
λόγοι ἐνέσονται καὶ ἡ σύνθεσις· γνωριεῖ γὰρ ἕκαστον τὸ
ὅμοιον, τὸ δ' ὀστοῦν ἢ τὸν ἄνθρωπον οὐθέν, εἰ μὴ καὶ ταῦτ'
ἐνέσται. τοῦτο δ' ὅτι ἀδύνατον, οὐθὲν δεῖ λέγειν· τίς γὰρ ἂν 10
ἀπορήσειεν εἰ ἔνεστιν ἐν τῇ ψυχῇ λίθος ἢ ἄνθρωπος; ὁμοίως
δὲ καὶ τὸ ἀγαθὸν καὶ τὸ μὴ ἀγαθόν· τὸν αὐτὸν δὲ τρόπον
7 καὶ περὶ τῶν ἄλλων. ἔτι δὲ πολλαχῶς λεγομένου τοῦ ὄντος
(σημαίνει γὰρ τὸ μὲν τόδε τι, τὸ δὲ ποσὸν ἢ ποιὸν ἢ καί
τινα ἄλλην τῶν διαιρεθεισῶν κατηγοριῶν) πότερον ἐξ ἁπάν- 15
των ἔσται ἡ ψυχὴ ἢ οὔ; ἀλλ' οὐ δοκεῖ κοινὰ πάντων εἶναι
στοιχεῖα. ἆρ' οὖν ὅσα τῶν οὐσιῶν, ἐκ τούτων μόνον; πῶς οὖν
γινώσκει καὶ τῶν ἄλλων ἕκαστον; ἢ φήσουσιν ἑκάστου γένους
εἶναι στοιχεῖα καὶ ἀρχὰς ἰδίας, ἐξ ὧν τὴν ψυχὴν συνεστά-
ναι; ἔσται ἄρα ποσὸν καὶ ποιὸν καὶ οὐσία. ἀλλ' ἀδύνατον ἐκ 20

24. ἵν' om. pr. E || αἴσθηται T W et corr. E (Trend.), αἰσθάνηται etiam Them. Soph. || 31. τίνι...ἢ] οὐ...οὐδ' W X || 410 a, 1. ὁτιοῦν ἄλλο excepto E omnes codd., etiam Soph. Trend. || 2. τούτων] τῶν pr. E (Trend.) || post ἕκαστον virg. om. Diels, p. 208 || 5. τὰ δύο V et rc. E Bek. Trend., τὰς δύο W et Alex. in metaph. p. 135, 16 (ed. Hayduck), τὼ δύο, quod iam Steinhart coniecerat, scripserunt Torst. Biehl in ed. pr. Rodier Diels, Herm. XV, 166 sqq., τῶν δύο S T U X y et pr. E (Bhl.), etiam Them. Philop. Soph., scripsit Biehl in ed. alt. || μοιράων U V W y et rc. E Philop., μερέων ut videtur pr. E (Trend.) et Alex. l. l. Them. Soph. || 6. λεύκ' S U X Alex. l. l. Them. Soph. Bek. Trend. || ἐγένοντο S U X, Alex. Them. Soph. Bek. Trend., γένοντο nunc E, sed ante γ est una littera erasa (Bhl.) || 7. ἐνεῖναι solus E_1 Torst., ceteri codd. εἶναι, etiam Soph. || 11. ἐστὶν U W X, ἔνεστιν

elements. Soul, we are told, is composed of the elements in order that it may perceive and know each several thing. But this theory necessarily involves many impossibilities. For it is assumed that like is known by like; which implies that soul is identical with the things that it knows. These elements, however, are not all that exists: there are a great, or perhaps we should say rather, an infinite number of other things as well, namely, those which are compounded of the elements.

Soul is not a compound of the elements.

Granted, then, that it is possible for the soul to know and to perceive the constituent elements of all these composite things, with what will it know or perceive the compound itself? I mean, what God or man is; what flesh or bone is: and so likewise with regard to any other composite thing. For it is not elements taken anyhow which constitute this or that thing, but only those which are united in a given proportion or combination, as Empedocles says of bone:— 6

Empedocles criticised.

"Then did the bounteous earth in broad-bosomed crucibles win out of eight parts two from the sheen of moisture and four from the fire-god; and the bones came into being all white."

It is therefore of no use for the elements to be in the soul, unless it also contains their proportions and the mode of combining them. For each element will know its like, but there will be nothing to know bone or man, unless these also are to be present in the soul: which, I need hardly say, is impossible. Who would ask if stone or man resides in the soul? And similarly with that which is good and that which is not good: and so for all the rest.

Being, again, is a term which has various meanings, signifying sometimes the particular thing, sometimes quantity or quality or any other of the categories which have been already determined. Is the soul to be derived from all of these, or not? It cannot be: the general opinion is that there are no elements common to all the categories. Does the soul, then, consist of those elements alone which are the elements of substances? How then does it know each of the other categories? Or will they say that each summum genus has special elements and principles of its own, and that the soul is composed of these? Then soul will be at once quantity, quality and substance. But it is impossible from the elements of 7

etiam Soph. || ὁμοίως...12. μὴ ἀγαθόν unc. incl. Susemihl || 13. ἐπὶ τῶν T X Simpl. || 17. τὰ στοιχ. E y, τὰ om. Them. 33, 30 Soph. || post οὐσιῶν virgulam om. Bek. Trend. || μόνων S T U V X || 20. ἔσται...οὐσία Torst. suspecta sunt, agnoscunt haec verba et eodem quidem loco Philop. 179, 3 sq. Simpl. Soph., post 21. ποσόν posuit Belger.

τῶν τοῦ ποσοῦ στοιχείων οὐσίαν εἶναι καὶ μὴ ποσόν. τοῖς δὴ λέγουσιν ἐκ πάντων ταῦτά τε καὶ τοιαῦθ' ἕτερα συμβαίνει.
8 ἄτοπον δὲ καὶ τὸ φάναι μὲν ἀπαθὲς εἶναι τὸ ὅμοιον ὑπὸ τοῦ ὁμοίου, αἰσθάνεσθαι δὲ τὸ ὅμοιον τοῦ ὁμοίου καὶ γινώσκειν τῷ ὁμοίῳ τὸ ὅμοιον· τὸ δ' αἰσθάνεσθαι πάσχειν τι καὶ κι- 25 νεῖσθαι τιθέασιν· ὁμοίως δὲ καὶ τὸ νοεῖν τε καὶ γινώσκειν.
9 πολλὰς δ' ἀπορίας καὶ δυσχερείας ἔχοντος τοῦ λέγειν, καθάπερ Ἐμπεδοκλῆς, ὡς τοῖς σωματικοῖς στοιχείοις ἕκαστα γνωρίζεται, καὶ πρὸς τὸ ὅμοιον [μαρτυρεῖ τὸ νῦν λεχθέν]· ὅσα γάρ ἐστιν ἐν τοῖς τῶν ζῴων σώμασιν ἁπλῶς γῆς, οἷον 30 ὀστᾶ νεῦρα τρίχες, οὐθενὸς αἰσθάνεσθαι δοκεῖ, ὥστ' οὐδὲ τῶν **410b**
10 ὁμοίων· καίτοι προσῆκεν. ἔτι δ' ἑκάστῃ τῶν ἀρχῶν ἄγνοια πλείων ἢ σύνεσις ὑπάρξει· γνώσεται μὲν γὰρ ἓν ἕκαστον, πολλὰ δ' ἀγνοήσει· πάντα γὰρ τἆλλα. συμβαίνει δ' Ἐμπεδοκλεῖ γε καὶ ἀφρονέστατον εἶναι τὸν θεόν· μόνος γὰρ τῶν 5 στοιχείων ἓν οὐ γνωρίζει, τὸ νεῖκος, τὰ δὲ θνητὰ πάντα· ἐκ
11 πάντων γὰρ ἕκαστον. ὅλως τε διὰ τίν' αἰτίαν οὐχ ἅπαντα ψυχὴν ἔχει τὰ ὄντα, ἐπειδὴ πᾶν ἤτοι στοιχεῖον ἢ ἐκ στοιχείου ἑνὸς ἢ πλειόνων ἢ πάντων; ἀναγκαῖον γάρ ἐστιν ἕν τι γι-
12 νώσκειν ἢ τινὰ ἢ πάντα. ἀπορήσειε δ' ἄν τις καὶ τί ποτ' 10 ἐστὶ τὸ ἑνοποιοῦν αὐτά· ὕλῃ γὰρ ἔοικε τά γε στοιχεῖα· κυριώτατον γὰρ ἐκεῖνο τὸ συνέχον ὅ τί ποτ' ἐστίν· τῆς δὲ ψυχῆς εἶναί τι κρεῖττον καὶ ἄρχον ἀδύνατον· ἀδυνατώτερον δ' ἔτι τοῦ νοῦ· εὔλογον γὰρ τοῦτον εἶναι προγενέστατον καὶ κύριον κατὰ φύσιν, τὰ δὲ στοιχεῖά φασι πρῶτα τῶν ὄντων εἶναι. 15
13 πάντες δὲ καὶ οἱ διὰ τὸ γνωρίζειν καὶ αἰσθάνεσθαι τὰ ὄντα τὴν ψυχὴν ἐκ τῶν στοιχείων λέγοντες αὐτήν, καὶ οἱ τὸ κι-

25. δ'] *γὰρ* T X Susemihl Philop. in interpr. 180, 5, Rodier || *τε* E Soph., reliqui *τι*, etiam Philop. 181, 4 || *κινεῖν* E, *ποιεῖν* U X || 26. *τε* om. E, *τι* V, leg. *τε* etiam Soph. || 29. *πρὸς τὸ ὅμοιον*] sic omnes codd., "et ad simile" vet. transl., pro his *τῷ ὁμοίῳ τὸ ὅμοιον* scripsit Torst. Sophoniam secutus || post *πρὸς* virgulam posuit, post *ὅμοιον* sustulit Rodier || *λεχθησόμενον* T et corr. U y, Soph. interpretatur *τὰ ἑξῆς λεχθησόμενα*, *λεχθέν* etiam Simpl. 70, 8 Philop. 180, 23, quorum uterque *λεχθησόμενον* interpretatur, vet. transl., verba *μαρτυρεῖ τὸ νῦν λεχθέν* unc. inclusit Torst., probat Susemihl || 30. *ἔνεστιν* S T U V Bek. Trend., *ἐστιν* etiam Philop. Soph. Torst. || 410 b, 2. *προσῆκεν τὰ νεῦρα καὶ τὰς τρίχας γεηρὰ ὄντα τῶν ὁμοίων αἰσθάνεσθαι. ἔτι* W, de his nihil veteres interpretes || 3. *πλέον* S U V W X y Soph., *πλείων* etiam Them. || *ὑπάρχει* W X || *ἑκάστῃ* T W X Soph. || 4. *πάντα γὰρ τἆλλα* om. pr. E, leg. Them. et sine dubio Soph., Dittenberger, Gött. gel. Anz., 1863, p. 1614, ut superflua omitti vult || 6. *γνωρίζει* solus E Torst., cui assentitur Noetel, Zeitschr. f. Gym. 1864, p. 141, reliqui ante Torst. omnes *γνωριεῖ*, etiam Them. Soph. ||

quantity to derive substance or anything but quantity. These, then, and others like them are the difficulties which confront those who derive soul from all the elements. There is a further incon- 8 sistency in maintaining that like is unaffected by like and yet at the same time that like perceives like and knows like by like. But they assume that perceiving is a sort of being acted upon or moved. And the same holds of thinking and knowing.

Of the many problems and difficulties involved in holding with 9 Empedocles that each thing is known through corporeal elements and by reference to its like [*what has just been said is evidence*].— For, it would seem, whatever within the bodies of animals consists entirely of earth, such as bones, sinews, hair, perceives nothing at all, and consequently cannot perceive its like; as in consistency it should. Moreover, each one of the elemental principles will have 10 a far larger share of ignorance than of intelligence; there being many things of which it will be ignorant and only one which it will know: in fact, it will be ignorant of all besides that one. It follows, for Empedocles at any rate, that God is quite the most unintelligent of beings. There is one of the elements, viz. Strife, which he, and he alone, will not know, while mortal things, being composed of all the elements, will know them all. And in general, 11 seeing that everything is either an element or derived from one or more or all elements, why should not all things that exist have soul? For they must certainly know one thing or some things or all. It might further be asked what it is that gives them unity. 12 For the elements, at all events, correspond to matter. That other principle, whatever it be, which holds them together, is supreme. Yet it is impossible that anything should be superior to the soul and overrule it; and still more impossible that anything should overrule intelligence. This, it may reasonably be held, has a natural priority and authority. Yet we are told that the elements are prior to all other things that exist.

And it is characteristic, alike of those who derive the soul from 13 the elements on the ground of perception and knowledge, and of those who define it as the thing most capable of causing motion,

ἐκ πάντων γὰρ ἕκαστον unc. incl. Torst., praeter omnes codd. tuentur haec verba Them. Soph. 34, 15, et, ut videtur, Philop. 181, 28 sq., defendit Dittenberger, Progr. Rudolstadt 1869, p. 19 || 7. δὲ S T U V W, τε etiam Them. et, ut videtur, Soph. 34, 15 || 8. πᾶν om. pr. E, leg. Soph., πάντα Them. || ἤτοι στοιχεῖον recepit Torst. ex solo E (Bus.), reliqui ante Torst. omnes ἢ στ., etiam Them. || 9. ἢ ἐκ πλ. T V W || ἕν τι] ἐν S U X, ἢ ἐν W || 11. γε om. S T W X || 12. γὰρ] γὰρ E, sed in rasura, Bek. δ' subfuisse coni. (Trend.), γὰρ etiam ceteri codd. et Soph., δ' scripsit Torst. || 13. κρεῖσσον E W X.

νητικώτατον, οὐ περὶ πάσης λέγουσι ψυχῆς. οὔτε γὰρ τὰ
αἰσθανόμενα πάντα κινητικά· φαίνεται γὰρ εἶναί τινα μό-
νιμα τῶν ζῴων κατὰ τόπον· καίτοι δοκεῖ γε ταύτην μόνην 20
τῶν κινήσεων κινεῖν ἡ ψυχὴ τὸ ζῷον. ὁμοίως δὲ καὶ ὅσοι
τὸν νοῦν καὶ τὸ αἰσθητικὸν ἐκ τῶν στοιχείων ποιοῦσιν· φαίνεται
γὰρ τά τε φυτὰ ζῆν οὐ μετέχοντα φορᾶς οὐδ' αἰσθήσεως,
14 καὶ τῶν ζῴων πολλὰ διάνοιαν οὐκ ἔχειν. εἰ δέ τις καὶ ταῦτα
παραχωρήσειε καὶ θείη τὸν νοῦν μέρος τι τῆς ψυχῆς, ὁμοίως 25
δὲ καὶ τὸ αἰσθητικόν, οὐδ' ἂν οὕτω λέγοιεν καθόλου περὶ
15 πάσης ψυχῆς οὐδὲ περὶ ὅλης οὐδεμιᾶς. τοῦτο δὲ πέπονθε
καὶ ὁ ἐν τοῖς Ὀρφικοῖς ἔπεσι καλουμένοις λόγος· φησὶ γὰρ
τὴν ψυχὴν ἐκ τοῦ ὅλου εἰσιέναι ἀναπνεόντων, φερομένην ὑπὸ
τῶν ἀνέμων. οὐχ οἷόν τε δὴ τοῖς φυτοῖς τοῦτο συμβαίνειν οὐδὲ 30
τῶν ζῴων ἐνίοις, εἴπερ μὴ πάντα ἀναπνέουσιν· τοῦτο δὲ λέ- 411a
16 ληθε τοὺς οὕτως ὑπειληφότας. εἴ τε δεῖ τὴν ψυχὴν ἐκ τῶν
στοιχείων ποιεῖν, οὐθὲν δεῖ ἐξ ἁπάντων· ἱκανὸν γὰρ θάτερον
μέρος τῆς ἐναντιώσεως ἑαυτό τε κρίνειν καὶ τὸ ἀντικείμενον.
καὶ γὰρ τῷ εὐθεῖ καὶ αὐτὸ καὶ τὸ καμπύλον γινώσκομεν· 5
κριτὴς γὰρ ἀμφοῖν ὁ κανών, τὸ δὲ καμπύλον οὔθ' ἑαυτοῦ
17 οὔτε τοῦ εὐθέος. καὶ ἐν τῷ ὅλῳ δέ τινες αὐτὴν μεμεῖχθαί
φασιν, ὅθεν ἴσως καὶ Θαλῆς ᾠήθη πάντα πλήρη θεῶν εἶναι.
18 τοῦτο δ' ἔχει τινὰς ἀπορίας· διὰ τίνα γὰρ αἰτίαν ἐν μὲν τῷ
ἀέρι ἢ τῷ πυρὶ οὖσα ἡ ψυχὴ οὐ ποιεῖ ζῷον, ἐν δὲ τοῖς μει- 10
19 κτοῖς, καὶ ταῦτα βελτίων ἐν τούτοις εἶναι δοκοῦσα; ἐπιζητή-
σειε γὰρ ἄν τις καὶ διὰ τίν' αἰτίαν ἡ ἐν τῷ ἀέρι ψυχὴ τῆς
20 ἐν τοῖς ζῴοις βελτίων ἐστὶ καὶ ἀθανατωτέρα. συμβαίνει δ'
ἀμφοτέρως ἄτοπον καὶ παράλογον· καὶ γὰρ τὸ λέγειν
ζῷον τὸ πῦρ ἢ τὸν ἀέρα τῶν παραλογωτέρων ἐστί, καὶ τὸ 15

18. πάσης E Them. Philop., ἁπάσης ceteri codd. et Soph. || οὔτε] οὐδὲ coni. Steinhart || 20. fortasse legendum μόνη annotat Trend., μόνην <μόνη> coni. Susemihl, Oecon. p. 84, probat Rodier II, p. 154 || 22. τὸν νοῦν καὶ τὸ αἰσθητικὸν unc. incl. Torst., tuentur Them. Philop. et Vahlen, Oester. Gym. Zeitschr. 1868, p. 20 || 23. φορᾶς οὐδ' unc. incl. Torst., leg. etiam Philop. Simpl. et sine dubio Them. || 26. οὕτω] οὗτοι Them. 35, 15 || καθόλου om. T U V Torst., tuentur etiam Them. Simpl. et Vahlen l. l. p. 21 || 27. οὐδεμιᾶς] οὐδὲ μιᾶς E T U V W Bek. Trend., μιᾶς (omisso οὐδὲ) Torst., οὐδὲ περὶ μιᾶς S X Simpl. (cf. Soph. 35, 12 οὐδὲ περὶ ὅλης οὐδὲ περὶ μιᾶς), οὐδεμιᾶς etiam Them. et sine dubio Philop., qui in interpr. bis περὶ οὐδεμιᾶς ὅλης, semel περὶ μιᾶς ὅλης, semel περὶ ὅλης μιᾶς || τοῦτο δὲ... 411 a, 2. ὑπειληφότας post 411 a, 7. εὐθέος transponenda coni. Bywater, Journ. of Phil. 1888, p. 53 sq., cui assentitur Susemihl || 28. καλουμένοις ἔπεσι T V W y Them., καλουμένοις om. S, καλούμενος Soph., λεγομένοις Philop. 186, 24 (sed in lemmate καλουμένοις) || λόγους

that their assertions do not apply to soul in every form. For not all sentient beings can cause motion; some animals are seen to be stationary in one place. And yet it is at all events a received view that this, namely, change of place, is the one form of motion which the soul imparts to the animal. Similarly with those who derive intelligence and the faculty of sense from the elements. For plants are found to live without any share in locomotion or sensation, and many animals to be destitute of thought. If we waive this point 14 and assume intellect to be a part of the soul, and the faculty of sense likewise, even then their statements would not apply generally to all soul, nor to the whole of any one soul. The account 15 given in the so-called Orphic poems is open to the same strictures. For the soul, it is there asserted, enters from the universe in the process of respiration, being borne upon the winds. Now it is impossible that this should be so with plants or even with some animals, seeing that they do not all respire: a point which the upholders of this theory have overlooked. And if the soul is to be constructed out of the elements, 16 there is no need to employ them all, the one of a pair of contraries being sufficient to discern both itself and its opposite. For by that which is straight we discern both the straight and the crooked, the carpenter's rule being the test of both. On the other hand that which is crooked is not a test of itself or of that which is straight.

The Orphic cosmogony.

There are some, too, who say that soul is interfused throughout the universe: which is perhaps why Thales supposed 17 all things to be full of gods. But this view presents 18 some difficulties. For why should the soul not produce an animal, when present in air or fire, and yet do so when present in the compounds of these elements: and that, too, though in the former case it is believed to be purer? One might 19 also enquire why the soul present in air is purer and more immortal than soul in animals. Whichever of the two suppositions 20 open to us we adopt is absurd and irrational. To speak of fire or air as an animal is very irrational; and on the other hand

Soul not diffused through the universe.

E_1, λόγος corr. E_2 (Bhl.) || 30. δὲ T W X et corr. E Soph., δὴ reliqui et scripti et impressi et E_1 || 411 a, 1. δὴ E, δὲ etiam Simpl. et, ut videtur, Them. 35, 20 || 2. εἰ δὲ X Trend., εἴπερ S V W, εἴπερ δὲ T et nunc E, εἴ τε δὲ olim subfuisse nihil nisi coniectura Bekkeri (Trend.), εἴτε U Bek. Torst., εἰ καὶ in interpret. Simpl. || 8. ἴσως om. V Soph., leg. Simpl. || 9. τίνα μὲν γὰρ V y et corr. E, om. μὲν Them. || ἐν μὲν] μὲν om. S T V y, leg. Them. || 10. ἢ ἐν τῷ S T U || 11. βέλτιον E, βελτίων etiam Soph. || ἐπιζητήσειε... 13. ἀθανατωτέρα in parenth. Torst. Susemihl || 12. γὰρ] δ' W X Soph. et, ut videtur, Philop. 189, 4, γὰρ reliqui, etiam rc. E, sed Bek. coni. fuisse γ' (Trend.) || 15. παραλόγων S U X, παραβολωτέρων Them. 36, 2, Philop. 189, 11 (sed in v. l. utriusque vulg.) || τὸ om. T V W.

21 μὴ λέγειν ζῷα ψυχῆς ἐνούσης ἄτοπον. ὑπολαβεῖν δ' ἐοίκασιν
εἶναι τὴν ψυχὴν ἐν τούτοις, ὅτι τὸ ὅλον τοῖς μορίοις ὁμοειδές·
ὥστ' ἀναγκαῖον αὐτοῖς λέγειν καὶ τὴν ψυχὴν ὁμοειδῆ τοῖς
μορίοις εἶναι, εἰ τῷ ἀπολαμβάνεσθαί τι τοῦ περιέχοντος ἐν
τοῖς ζῴοις ἔμψυχα τὰ ζῷα γίνεται. εἰ δ' ὁ μὲν ἀὴρ διασπώ- 20
μενος ὁμοειδής, ἡ δὲ ψυχὴ ἀνομοιομερής, τὸ μέν τι αὐτῆς
ὑπάρξει δῆλον ὅτι, τὸ δ' οὐχ ὑπάρξει. ἀναγκαῖον οὖν αὐτὴν
ἢ ὁμοιομερῆ εἶναι ἢ μὴ ἐνυπάρχειν ἐν ὁτῳοῦν μορίῳ τοῦ παντός.

22 φανερὸν οὖν ἐκ τῶν εἰρημένων ὡς οὔτε τὸ γινώσκειν ὑπάρ-
χει τῇ ψυχῇ διὰ τὸ ἐκ τῶν στοιχείων εἶναι, οὔτε τὸ κινεῖ- 25
23 σθαι αὐτὴν καλῶς οὐδ' ἀληθῶς λέγεται. ἐπεὶ δὲ τὸ γινώ-
σκειν τῆς ψυχῆς ἐστὶ καὶ τὸ αἰσθάνεσθαί τε καὶ τὸ δοξά-
ζειν, ἔτι δὲ τὸ ἐπιθυμεῖν καὶ βούλεσθαι καὶ ὅλως αἱ ὀρέξεις,
γίνεται δὲ καὶ ἡ κατὰ τόπον κίνησις τοῖς ζῴοις ὑπὸ τῆς
ψυχῆς, ἔτι δ' αὔξη τε καὶ ἀκμὴ καὶ φθίσις, πότερον ὅλῃ 30
τῇ ψυχῇ τούτων ἕκαστον ὑπάρχει, καὶ πάσῃ νοοῦμέν τε καὶ 411b
αἰσθανόμεθα καὶ κινούμεθα καὶ τῶν ἄλλων ἕκαστον ποιοῦμέν τε
καὶ πάσχομεν, ἢ μορίοις ἑτέροις ἕτερα; καὶ τὸ ζῆν δὴ πότερον ἔν
τινι τούτων ἐστὶν ἢ καὶ ἐν πλείοσιν ἢ πᾶσιν, ἢ καὶ ἄλλο τι
24 αἴτιον; λέγουσι δή τινες μεριστὴν αὐτήν, καὶ ἄλλο μὲν 5
νοεῖν ἄλλο δὲ ἐπιθυμεῖν. τί οὖν δή ποτε συνέχει τὴν ψυχήν,
εἰ μεριστὴ πέφυκεν; οὐ γὰρ δὴ τό γε σῶμα· δοκεῖ γὰρ τοὐ-
ναντίον μᾶλλον ἡ ψυχὴ τὸ σῶμα συνέχειν· ἐξελθούσης γοῦν
διαπνεῖται καὶ σήπεται. εἰ οὖν ἕτερόν τι μίαν αὐτὴν ποιεῖ,
ἐκεῖνο μάλιστ' ἂν εἴη ψυχή. δεήσει δὲ πάλιν κἀκεῖνο ζη- 10
τεῖν πότερον ἓν ἢ πολυμερές. εἰ μὲν γὰρ ἕν, διὰ τί οὐκ
εὐθέως καὶ ἡ ψυχὴ ἕν; εἰ δὲ μεριστόν, πάλιν ὁ λόγος ζη-
τήσει τί τὸ συνέχον ἐκεῖνο, καὶ οὕτω δὴ πρόεισιν ἐπὶ τὸ
25 ἄπειρον. ἀπορήσειε δ' ἄν τις καὶ περὶ τῶν μορίων αὐτῆς,

17. *εἶναι* om. S U X, *τὴν ψυχὴν εἶναι* T V W y Them. || *ὅλον ἐν τοῖς* E || 19. *εἶναι* om. pr. E || *ἀπολαμβάνειν* S T U W y, tuentur *ἀπολαμβάνεσθαι* Philop. Soph. || 20. *τὰ* om. S T U V W y || 22. *ὑπάρξει δῆλον ὅτι* fort. inserta ex margine putat Torst., tuentur etiam Simpl. Philop. || 23. *ἢ* ante *ὁμ.* om. E, leg. Simpl. || 26. *οὐδ' ἀληθῶς* om. pr. E, leg. Soph., Dittenberger p. 1614 ut superflua omitti vult || *ἐπειδὴ* U W y et corr. E, Bek. coni. fuisse *ἐπεὶ δὲ* (Trend.) || 27. *τῆς* om. T W y || *τὸ* ante *δοξ.* om. S T U W Soph. || 28. *δὲ καὶ τὸ* S U W X, *καὶ* etiam Soph. || *βουλεύεσθαι* T U V W X y et corr. E Them. 36, 29 Soph. || *αἱ* om. T X, leg. Soph. || 29. *ἡ* om. E (Trend.) || 30. *αὔξησις* S T U V W X et corr. E, *αὔξη* etiam Soph. || 411 b, 2. *αἰσθ. καὶ κινούμεθα καὶ* E V W Simpl. Soph. (qui *καὶ αἰσθανόμεθα* omittit) Torst., *αἰσθ. καὶ κινοῦμεν καὶ* X, *καὶ κινούμεθα* om. reliqui codd., etiam Bek. Trend. || 4. *ἐστὶν ἢ ἐνὶ ἢ* E, sed *ἐνὶ ἢ* expunct. (Bhl.), *ἐστὶν ἐνὶ ἢ* Bek. Trend.

not to call them animals, if they contain soul, is absurd. But 21 it would seem that the reason why they suppose soul to be in these elements is that the whole is homogeneous with its parts. So that they cannot help regarding universal soul as also homogeneous with the parts of it in animals, since it is through something of the surrounding element being cut off and enclosed in animals that the animals become endowed with soul. But if the air when split up remains homogeneous, and yet soul is divisible into non-homogeneous parts, it is clear that, although one part of soul may be present in the air, there is another part which is not. Either, then, soul must be homogeneous, or else it cannot be present in every part of the universe.

From what has been said it is evident that it is not because the 22 soul is compounded of the elements that knowledge belongs to it, nor is it correct or true to say that the soul is moved. Knowledge, 23 however, is an attribute of the soul, and so are perception, opinion, desire, wish and appetency generally; animal locomotion also is produced by the soul; and likewise growth, maturity and decay.

Unity of soul.

Shall we then say that each of these belongs to the whole soul, that we think, that is, and perceive and are moved and in each of the other operations act and are acted upon with the whole soul, or that the different operations are to be assigned to different parts? And what of life itself? Does it reside in any single one or more or all of these parts? Or has it a cause entirely distinct? Now some say that the soul is divisible and 24 that one part of it thinks, another desires. What is it then which holds the soul together, if naturally divisible? Assuredly it is not the body: on the contrary, the soul seems rather to hold the body together; at all events, when it has departed, the body disperses in air and rots away. If, then, the unity of soul is due to some other thing, that other thing would be, properly speaking, soul. We shall need, then, to repeat the enquiry respecting it also, whether it is one or manifold. For, if it has unity, why not attribute unity to the soul itself at the outset? If, however, it be divisible, then again reason will go on to ask what it is that holds *it* together, and so the enquiry will go on to infinity. It 25 might also be asked what power each of the parts of the soul

Torst. || ἢ καὶ πᾶσιν T U W X y, ἢ καὶ ἐν πᾶσιν S V Soph. || 5. δὲ S T U V || 5 et 6. ἄλλο E W Torst., probat etiam Noetel, Zeitschr. f. Gymn. 1864, p. 141, reliqui ante Torst. omnes ἄλλῳ, etiam Them. Simpl. Soph. 37, 27 (v. l. ἄλλο) vet. transl. || 7. γε ante τὸ T V, om. S U W X y || 10. ἡ ψυχή T V W y, ἡ om. etiam Them. Philop. || δὲ καὶ πάλιν T U V X Bek. Trend., καὶ om. y et E (Bek. teste Torstrikio et Trend.) || 12. καὶ τὴν ψυχὴν ἓν S U W X, καὶ τὴν ψυχὴν ἓν εἶναι T y, ἓν καὶ τὴν ψυχὴν εἶναι V.

[illegible]

ἀλλήλαις καὶ [illegible]

27 τῆς δ' ὅλης ψυχῆς [illegible]

τοῖς φυτοῖς ἀρχὴ ψυχή [illegible]

νωνεῖ καὶ ζῷα καὶ φυτά· καὶ [illegible] τῆς

αἰσθητικῆς ἀρχῆς, αἴσθησιν δ' οὐθὲν ἄνευ ταύτης ἔχει. 30

17. ἀδύνατον Philop. || 18. συνέχει E V et fort. Simpl. (cf. p. 95, 31), συνέξει etiam Them. Philop. Soph. || 21. μὴ καὶ E || γὰρ] γοῦν S V X Soph. Bek. Trend., οὖν U W, γὰρ in paraphr. Them. Philop. || 25. ὁμοειδῆ εἰσὶν ἀλλήλοις W et nunc E (Trend.) Soph. Bek. Trend. Rodier, ὁμοειδεῖς εἰσὶν ἀλλήλαις reliqui codd. et pr. E (Bek.), etiam Philop. Simpl. Torst. Biehl || 26. ἀλλήλων] ἀλλήλοις W Soph., ἀλλήλαις V, ἀλλήλων etiam Simpl. Philop. || 28. ψυχὴ ante ἀρχὴ T Torst., om. S U, ψυχὴ post ἀρχὴ videntur legisse etiam Them. 38, 22 sq. Philop. 202, 5. 6 || 29. καὶ τὰ ζῷα E, τὰ om. etiam Simpl. Soph., καὶ τὰ ζῷα καὶ τὰ φυτὰ in interpr. Them.

exercises in the body. For, if the entire soul holds together the whole body, then each of its parts ought properly to hold together some part of the body. But this seems impossible. For it is difficult even to conjecture what part the intellect will hold together or how it can hold any part together. It is found that plants, and 26 among animals certain insects or annelida, live when divided, which implies that the soul in their segments is specifically, though not numerically, the same. At any rate, each of the two segments retains sentience and the power of locomotion for some time: that they do not continue to do so is not surprising, as they lack the organs requisite to maintain their nature. But none the less all the parts of the soul are contained in each of the two segments, and the two halves of the soul are homogeneous alike with one another and with the whole; a fact which implies that, while the parts of the soul are inseparable from one another, the soul as a whole is divisible. It would seem that the vital principle 27 in plants also is a sort of soul. For this principle is the only one common to plants and animals; and, while it can be separated from the sensitive principle, no being which has sensation is without it.

The soul in plants.

ΠΕΡΙ ΨΥΧΗΣ Β.

1 Τὰ μὲν δὴ ὑπὸ τῶν πρότερον παραδεδομένα περὶ ψυ- 412a
χῆς εἰρήσθω· πάλιν δ' ὥσπερ ἐξ ὑπαρχῆς ἐπανίωμεν, πει-
ρώμενοι διορίσαι τί ἐστι ψυχὴ καὶ τίς ἂν εἴη κοινότατος 5
2 λόγος αὐτῆς. λέγομεν δὴ γένος ἕν τι τῶν ὄντων τὴν οὐσίαν,
ταύτης δὲ τὸ μὲν ὡς ὕλην, ὃ καθ' αὑτὸ μὲν οὐκ ἔστι τόδε
τι, ἕτερον δὲ μορφὴν καὶ εἶδος, καθ' ἣν ἤδη λέγεται τόδε
τι, καὶ τρίτον τὸ ἐκ τούτων. ἔστι δ' ἡ μὲν ὕλη δύναμις, τὸ
δ' εἶδος ἐντελέχεια, καὶ τοῦτο διχῶς, τὸ μὲν ὡς ἐπιστήμη, 10
3 τὸ δ' ὡς τὸ θεωρεῖν. οὐσίαι δὲ μάλιστ' εἶναι δοκοῦσι τὰ σώ-
ματα, καὶ τούτων τὰ φυσικά· ταῦτα γὰρ τῶν ἄλλων ἀρ-
χαί. τῶν δὲ φυσικῶν τὰ μὲν ἔχει ζωήν, τὰ δ' οὐκ ἔχει·
ζωὴν δὲ λέγομεν τὴν δι' αὑτοῦ τροφήν τε καὶ αὔξησιν καὶ
φθίσιν. ὥστε πᾶν σῶμα φυσικὸν μετέχον ζωῆς οὐσία ἂν 15
4 εἴη, οὐσία δ' οὕτως ὡς συνθέτη. ἐπεὶ δ' ἐστὶ καὶ σῶμα τοι-
όνδε, ζωὴν γὰρ ἔχον, οὐκ ἂν εἴη τὸ σῶμα ἡ ψυχή· οὐ
γάρ ἐστι τῶν καθ' ὑποκειμένου τὸ σῶμα, μᾶλλον δ' ὡς
ὑποκείμενον καὶ ὕλη. ἀναγκαῖον ἄρα τὴν ψυχὴν οὐσίαν
εἶναι ὡς εἶδος σώματος φυσικοῦ δυνάμει ζωὴν ἔχον- 20
τος. ἡ δ' οὐσια ἐντελέχεια. τοιούτου ἄρα σώματος ἐν-

412 a, 3. Τὰ *μὲν*...4. *ἐπανίωμεν*] *Ἐπεὶ δὲ τὰ παραδεδομένα περὶ ψυχῆς παρὰ τῶν ἄλλων, ἐφ' ὅσον* (*ὅσων* X), *ἕκαστος ἀπεφήνατο* (*τῶν* E) *πρότερον* (*πρῶτον* W X), *εἴρηται σχεδόν, νῦν* (*νῦν δὲ* W), *ὥσπερ ἐξ ἀρχῆς πάλιν ἐπανίωμεν* S U W X m Soph. et E fol. 186 (vide appendicem). Them. Simpl. Philop. et vetusta translatio latina sine dubio vulgatam legerunt || 3. *προτέρων* V y || 4. *εἴρηται* margo E, *εἰρήσθω* etiam Simpl. || 5. *ἐστι ψυχὴ* E et fol. 186 et 187 (Bhl.), *ἡ* om. etiam Them. Soph. || *ἂν εἴη*] *ἐστι* S U W X, *ἂν εἴη* etiam Them. Soph. || *κοινὸς* U W X, *κοινότατος* etiam Them. Simpl. Soph. || 6. *λέγομεν*... 12. *φυσικά* vid. append., vulgatam legerunt etiam Alex. *ἀπ. καὶ λύσ.* 74, 32 et Them. || 6. *δὲ* U V, *δὴ* Alex. l. l. Them. || *ἕν τι γένος* S W X, *γένος ἕν τι* etiam Alex. l. l. Them. Soph. || 9. *δυνάμει* y Philop. et, ut videtur, Them. 39, 7. 10 Simpl. 84, 1 (cf. 83, 30. 34), *δύναμις* etiam Soph. || 11. *ὡς τὸ* om. E et margo E, leg. Them. || 14. *ἑαυτοῦ* Them., *αὑτοῦ* etiam Simpl. Soph. 41, 5 (in cod. Vindob., teste Biehlio, *δι αὐτοῦ* e codd. Hayduck) || 16. *δή ἐστι* E_1 y et, ut videtur, Them. 39, 33, qui interpretatur *τοίνυν*, rc. E

DE ANIMA. Book II.

So much for the theories of soul handed down by our predecessors. Let us, then, make a fresh start and try to determine what soul is and what will be its most comprehensive definition. Now there is one class of existent things which we call substance, including under the term, firstly, matter, which in itself is not this or that; secondly, shape or form, in virtue of which the term this or that is at once applied; thirdly, the whole made up of matter and form. Matter is identical with potentiality, form with actuality. And there are two meanings of actuality: knowledge illustrates the one, exercise of knowledge the other. Now bodies above all things are held to be substances, particularly such bodies as are the work of nature; for to these all the rest owe their origin. Of natural bodies some possess life and some do not: where by life we mean the power of self-nourishment and of independent growth and decay. Consequently every natural body possessed of life must be substance, and substance of the composite order. And since in fact we have here body with a certain attribute, namely, the possession of life, the body will not be the soul: for the body is not an attribute of a subject, it stands rather for a subject of attributes, that is, matter. It must follow, then, that soul is substance in the sense that it is the form of a natural body having in it the capacity of life. Such substance is actuality. The soul,

Soul in the widest application of the term defined.

1 2 3 4

(Rr.) et reliqui δ' ἐστί, etiam Soph. || καὶ ante σῶμα om. U V W X P Soph. Bek. Trend. Rodier Zeller II, 2[3], p. 480 || τοιόνδε E T P, καὶ τοιονδὶ τοῦτο S U V W X Rodier, καὶ τοιονδὶ y Trend. Hunc v. varie interpretantur; ἐπεὶ οὐχ ἁπλῶς σῶμα, ἀλλὰ σῶμα τοιονδὶ Them., Philop. modo καὶ σῶμά ἐστι καὶ τοιονδί 215, 5, modo σῶμά ἐστι τοιονδί 215, 7 sq., ἐπεὶ δ' ἐστὶ σῶμα καὶ τοιόνδε σῶμα Soph. || 17. τὸ om. S U Zeller, Archiv f. G. d. Ph. IX, p. 538 || ἡ ψυχή S U V W X y Philop. 215, 11. 18. 22 Alex. ap. Philop. Zeller l. l., ἡ om. E T Bek. Trend. Torst. Biehl Rodier, etiam Soph., de Them. non liquet, qui, cum 39, 35 οὐδεὶς γὰρ ἂν εἴποι τὸ σῶμα εἶδος τοῦ ζῶντος σώματος, tum 40, 4 ὅτι γὰρ οὐ σῶμα ἡ ψυχὴ δέδεικται interpretatur: cf. 40, 34 || εἶδος pro ψυχή coni. Innes, Cl. Rev. XVI, p. 462.

5 τελέχεια. αὕτη δὲ λέγεται διχῶς, ἡ μὲν ὡς ἐπιστήμη, ἡ δ' ὡς τὸ θεωρεῖν. φανερὸν οὖν ὅτι ὡς ἐπιστήμη· ἐν γὰρ τῷ ὑπάρχειν τὴν ψυχὴν καὶ ὕπνος καὶ ἐγρήγορσίς ἐστιν, ἀνάλογον δ' ἡ μὲν ἐγρήγορσις τῷ θεωρεῖν, ὁ δ' ὕπνος τῷ 25 ἔχειν καὶ μὴ ἐνεργεῖν· προτέρα δὲ τῇ γενέσει ἐπὶ τοῦ αὐτοῦ ἡ ἐπιστήμη. διὸ ἡ ψυχή ἐστιν ἐντελέχεια ἡ πρώτη σώματος 6 φυσικοῦ δυνάμει ζωὴν ἔχοντος. τοιοῦτο δέ, ὃ ἂν ᾖ ὀργανικόν. ὄργανα δὲ καὶ τὰ τῶν φυτῶν μέρη, ἀλλὰ παντελῶς 412b ἁπλᾶ, οἷον τὸ φύλλον περικαρπίου σκέπασμα, τὸ δὲ περικάρπιον καρποῦ· αἱ δὲ ῥίζαι τῷ στόματι ἀνάλογον· ἄμφω γὰρ ἕλκει τὴν τροφήν. εἰ δή τι κοινὸν ἐπὶ πάσης ψυχῆς δεῖ λέγειν, εἴη ἂν ἐντελέχεια ἡ πρώτη σώματος φυσικοῦ 5 7 ὀργανικοῦ. διὸ καὶ οὐ δεῖ ζητεῖν εἰ ἓν ἡ ψυχὴ καὶ τὸ σῶμα, ὥσπερ οὐδὲ τὸν κηρὸν καὶ τὸ σχῆμα, οὐδ' ὅλως τὴν ἑκάστου ὕλην καὶ τὸ οὗ ἡ ὕλη· τὸ γὰρ ἓν καὶ τὸ εἶναι ἐπεὶ πλεοναχῶς λέγεται, τὸ κυρίως ἡ ἐντελέχειά ἐστιν.

8 καθόλου μὲν οὖν εἴρηται τί ἐστιν ἡ ψυχή· οὐσία γὰρ ἡ κατὰ 10 τὸν λόγον. τοῦτο δὲ τὸ τί ἦν εἶναι τῷ τοιῳδὶ σώματι, καθάπερ εἴ τι τῶν ὀργάνων φυσικὸν ἦν σῶμα, οἷον πέλεκυς· ἦν μὲν γὰρ ἂν τὸ πελέκει εἶναι ἡ οὐσία αὐτοῦ, καὶ ἡ ψυχὴ τοῦτο· χωρισθείσης δὲ ταύτης οὐκ ἂν ἔτι πέλεκυς ἦν, ἀλλ' ἢ ὁμωνύμως. νῦν δ' ἐστὶ πέλεκυς· οὐ γὰρ τοιούτου σώματος τὸ τί 15 ἦν εἶναι καὶ ὁ λόγος ἡ ψυχή, ἀλλὰ φυσικοῦ τοιουδὶ ἔχον-9 τος ἀρχὴν κινήσεως καὶ στάσεως ἐν ἑαυτῷ. θεωρεῖν δὲ καὶ ἐπὶ τῶν μερῶν δεῖ τὸ λεχθέν. εἰ γὰρ ἦν ὁ ὀφθαλμὸς ζῷον, ψυχὴ ἂν ἦν αὐτοῦ ἡ ὄψις· αὕτη γὰρ οὐσία ὀφθαλμοῦ ἡ κατὰ τὸν λόγον. ὁ δ' ὀφθαλμὸς ὕλη ὄψεως, ἧς ἀπολει- 20 πούσης οὐκέτ' ὀφθαλμός, πλὴν ὁμωνύμως, καθάπερ ὁ λί-

26. δὴ E (Bus.) et U y, reliqui omnes δὲ || 27. διὸ ἡ ψ. E T V y Biehl Rodier, ἡ om. reliqui, etiam Soph. || 28. τοιοῦτον S T V W X || 412 b, 4. δὲ E S T V y, δὴ etiam Them. Soph. Philop. ad 402 b, 5 (37, 15) et in prooemio ad lib. II. (205, 15) Bek. Trend. Torst. || 5. ἡ πρώτη ἐντ. W X, vulgatam tuetur etiam Them. || 8. οὗ ὕλη S U W X Soph. Bek. Trend. Torst. || 9. λέγεται om. S U W X Them., leg. etiam Soph. || 12. μὲν E (Trend. Bus.) et y Torst. Belger in ed. alt. Trend. Biehl Rodier, om. reliqui, etiam Philop. || 13. τὸ] τῷ E T W et rc. X || 14. δὲ] γὰρ S X Bek. Trend. Torst., "autem" vet. transl., διὸ ἀπελθούσης P || 15. νῦν δ' οὐκ ἔστιν coni. Torst., neque Them. neque Philop. neque Soph. οὐ legerunt || 16. τοιουδὶ etiam Soph., τοῦ Alex. ἀπ. καὶ λ. 76, 14 et Philop. || 17. αὐτῷ S U V W Alex. l. l., αὐτῷ X, ἑαυτῷ etiam Philop. || 20. Torst. coni. ὁ δ' ὀφθαλμὸς τὸ σύνολον, ἡ δὲ κόρη ὕλη ὄψεως, iisdem fere verbis interpretatur Them., ὁ δ'...ὄψεως in parenth. ponenda, puncto post λόγον deleto, censet Bywater, J. of Ph.

therefore, is the actuality of the body above described. But the 5 term 'actuality' is used in two senses; in the one it answers to knowledge, in the other to the exercise of knowledge. Clearly in this case it is analogous to knowledge: for sleep, as well as waking, implies the presence of soul; and, whilst waking is analogous to the exercise of knowledge, sleep is analogous to the possession of knowledge without its exercise; and in the same individual the possession of knowledge comes in order of time before its exercise. Hence soul is the first actuality of a natural body having in it the capacity of life. And a body which is possessed of organs 6 answers to this description.—We may note that the parts of plants, as well as those of animals, are organs, though of a very simple sort: for instance, a leaf is the sheath of the pod and the pod of the fruit. The roots, again, are analogous to the mouths of animals, both serving to take in nourishment.—If, then, we have to make a general statement touching soul in all its forms, the soul will be the first actuality of a natural body furnished with organs. Hence there is no need to enquire whether soul and body are 7 one, any more than whether the wax and the imprint are one; or, in general, whether the matter of a thing is the same with that of which it is the matter. For, of all the various meanings borne by the terms unity and being, actuality is the meaning which belongs to them by the fullest right.

It has now been stated in general terms what soul is, namely, 8 substance as notion or form. And this is the quiddity of such and such a body. Suppose, for example, that any instrument, say, an axe, were a natural body, its axeity would be its substance, would in fact be its soul. If this were taken away, it would cease, except in an equivocal sense, to be an axe. But the axe is after all an axe. For it is not of a body of this kind that the soul is the quiddity, that is, the notion or form, but of a natural body of a particular sort, having in itself the origination of motion and rest.

Illustration from (1) the axeity of an axe,

Further, we must view our statement in the light of the parts of 9 the body. For, if the eye were an animal, eyesight would be its soul, this being the substance as notion or form of the eye. The eye is the matter of eyesight, and in default of eyesight it is no longer an eye, except equivocally,

(2) the eyesight of an eye.

XVII, p. 54, cui assentitur Susemihl, vulgatam tuentur etiam Philop. 221, 24 Simpl. et vet. transl. || ἀπολιπούσης T V W Them. Simpl. Trend., ἀπολειπούσης etiam Soph. || 21. οὐκ ἔστιν S T U V W Bek. Trend., οὐκέτι E X, οὐκέτ' Them. Torst., οὐκέτι ἐστὶν in interpr. Simpl. 93, 32, οὐκέτι ἔσται Soph. || ὁμώνυμος E.

θινος καὶ ὁ γεγραμμένος. δεῖ δὴ λαβεῖν τὸ ἐπὶ μέρους ἐφ' ὅλου τοῦ ζῶντος σώματος· ἀνάλογον γὰρ ἔχει ὡς τὸ μέρος πρὸς τὸ μέρος, οὕτως ἡ ὅλη αἴσθησις πρὸς τὸ ὅλον
10 σῶμα τὸ αἰσθητικόν, ᾗ τοιοῦτον. ἔστι δὲ οὐ τὸ ἀποβεβληκὸς 25
τὴν ψυχὴν τὸ δυνάμει ὂν ὥστε ζῆν, ἀλλὰ τὸ ἔχον· τὸ δὲ
11 σπέρμα καὶ ὁ καρπὸς τὸ δυνάμει τοιονδὶ σῶμα. ὡς μὲν οὖν ἡ τμῆσις καὶ ἡ ὅρασις, οὕτω καὶ ἡ ἐγρήγορσις ἐντελέχεια, ὡς δ' ἡ ὄψις καὶ ἡ δύναμις τοῦ ὀργάνου, ἡ ψυχή· 413 a
τὸ δὲ σῶμα τὸ δυνάμει ὄν· ἀλλ' ὥσπερ ὀφθαλμὸς ἡ
12 κόρη καὶ ἡ ὄψις, κἀκεῖ ἡ ψυχὴ καὶ τὸ σῶμα ζῷον. ὅτι μὲν οὖν οὐκ ἔστιν ἡ ψυχὴ χωριστὴ τοῦ σώματος, ἢ μέρη τινὰ αὐτῆς, εἰ μεριστὴ πέφυκεν, οὐκ ἄδηλον· ἐνίων γὰρ ἡ 5
ἐντελέχεια τῶν μερῶν ἐστὶν αὐτῶν. οὐ μὴν ἀλλ' ἔνιά γε οὐθὲν κωλύει, διὰ τὸ μηθενὸς εἶναι σώματος ἐντελεχείας.
13 ἔτι δὲ ἄδηλον εἰ οὕτως ἐντελέχεια τοῦ σώματος ἡ ψυχὴ ὥσπερ πλωτὴρ πλοίου. τύπῳ μὲν οὖν ταύτῃ διωρίσθω καὶ ὑπογεγράφθω περὶ ψυχῆς. 10

2 Ἐπεὶ δ' ἐκ τῶν ἀσαφῶν μὲν φανερωτέρων δὲ γίγνεται τὸ σαφὲς καὶ κατὰ τὸν λόγον γνωριμώτερον, πειρατέον πάλιν οὕτω γ' ἐπελθεῖν περὶ αὐτῆς· οὐ γὰρ μόνον τὸ ὅτι δεῖ τὸν ὁριστικὸν λόγον δηλοῦν, ὥσπερ οἱ πλεῖστοι τῶν ὅρων λέγουσιν, ἀλλὰ καὶ τὴν αἰτίαν ἐνυπάρχειν καὶ ἐμφαίνεσθαι. 15 νῦν δ' ὥσπερ συμπεράσμαθ' οἱ λόγοι τῶν ὅρων εἰσίν· οἷον τί ἐστιν ὁ τετραγωνισμός; τὸ ἴσον ἑτερομήκει ὀρθογώνιον εἶναι ἰσόπλευρον. ὁ δὲ τοιοῦτος ὅρος λόγος τοῦ συμπεράσματος. ὁ δὲ λέγων ὅτι ἐστὶν ὁ τετραγωνισμὸς μέσης εὕρεσις,
2 τοῦ πράγματος λέγει τὸ αἴτιον. λέγομεν οὖν ἀρχὴν λαβόν- 20
τες τῆς σκέψεως, διωρίσθαι τὸ ἔμψυχον τοῦ ἀψύχου τῷ ζῆν. πλεοναχῶς δὲ τοῦ ζῆν λεγομένου, κἂν ἕν τι τούτων

22. δὲ V X, δὴ etiam Them., τοίνυν interpr. Simpl. || 24. οὕτως om. U V W X Soph., leg. Philop. Simpl. || 25. τοιοῦτο U W Bek. Trend., τοιοῦτον reliqui codd. et E (Bus.) Philop. Soph. Torst. || 27. τοιόνδε Alex. ἀπ. καὶ λ. 76, 25 || 28. τμῆσις codd., αἴσθησις coni. Christ || 413 a, 2. ὁ ὀφθ. T U W X Simpl. Soph. Bek. Trend., ὁ om. Philop. ad 412 b, 17 (231, 22) et Them. || 3. τὸ ζῷον S U W X Them. Simpl. Soph. Bek. Trend. || 5. ἐνίων γὰρ ἡ ἐντελέχεια] ἔνια γὰρ ἐντελέχειαι forsitan legerit Soph. 44, 29 || 8. τε E, δὲ etiam Philop. ad 411 a, 26 (139, 35) et Soph. || 13. οὕτω E (Bhl.) P, reliqui et scripti et ante Biehlium impressi omnes οὕτως || γ' ἐπελθεῖν E P Soph., reliqui et scripti et ante Biehlium impressi omnes om. γε, ἐπανελθεῖν S Philop. 230, 6 Simpl. || 17. ἐστι τετραγωνισμός V W Them. Soph. Bek. Trend. Torst. || 18. λόγος om. E T V || 19. ὁ post ἐστὶν om. W X Them. || εὕρησις T U W X || 20. λέγωμεν T W Alex. 77, 2,

like an eye in stone or in a picture. What has been said of the part must be understood to apply to the whole living body; for, as the sensation of a part of the body is to that part, so is sensation as a whole to the whole sentient body as such. By that which 10 has in it the capacity of life is meant not the body which has lost its soul, but that which possesses it. Now the seed in animals, like the fruit in plants, is that which is potentially such and such a body. As, then, the cutting of the axe or the seeing of the eye 11 is full actuality, so, too, is the waking state; while the soul is actuality in the same sense as eyesight and the capacity of the instrument. The body, on the other hand, is simply that which is potentially existent. But, just as in the one case the eye means the pupil in conjunction with the eyesight, so in the other soul and body together constitute the animal.

Soul inseparable from body.

Now it needs no proof that the soul—or if it is divisible into 12 parts, certain of its parts—cannot be separated from the body, for there are cases where the actuality belongs to the parts themselves. There is, however, no reason why some parts should not be separated, if they are not the actualities of any body whatever. Again, it is not clear whether the soul 13 may not be the actuality of the body as the sailor is of the ship. This, then, may suffice for an outline or provisional sketch of soul.

A possible analogy.

But, as it is from the things which are naturally obscure, though **2** more easily recognised by us, that we proceed to what is clear and, in the order of thought, more knowable, we must employ this method in trying to give a fresh account of soul. For it is not enough that the defining statement should set forth the fact, as most definitions do; it should also contain and present the cause: whereas in practice what is stated in the definition is usually no more than a conclusion. For example, what is quadrature? The construction of an equilateral rectangle equal in area to a given oblong. But such a definition expresses merely the conclusion. Whereas, if you say that quadrature is the discovery of a mean proportional, then you state the reason.

Test of a good definition.

We take, then, as our starting-point for discussion that it is life 2 which distinguishes the animate from the inanimate. But the term life is used in various senses; and, if life is present in but a

λέγομεν etiam Them. Philop. Soph. || *τὴν ἀρχὴν* Alex. l. l., *τὴν* om. Them. Philop., *ἄλλην ἀρχὴν* coni. Susemihl || 21. *σκέψεως τοῦ πράγματος* S U W X Alex. l. l., *τοῦ πράγ.* om. etiam Soph. || 22. *ζῆν*] *ζωὴν ἔχοντι σώματι* Alex. l. l.

ἐνυπάρχῃ μόνον, ζῆν αὐτό φαμεν, οἷον νοῦς, αἴσθησις, κί-
νησις καὶ στάσις ἡ κατὰ τόπον, ἔτι κίνησις ἡ κατὰ τρο-
3 φὴν καὶ φθίσις τε καὶ αὔξησις. διὸ καὶ τὰ φυόμενα 25
πάντα δοκεῖ ζῆν· φαίνεται γὰρ ἐν αὑτοῖς ἔχοντα δύναμιν
καὶ ἀρχὴν τοιαύτην, δι' ἧς αὔξησίν τε καὶ φθίσιν λαμ-
βάνουσι κατὰ τοὺς ἐναντίους τόπους· οὐ γὰρ ἄνω μὲν αὔξε-
ται, κάτω δ' οὔ, ἀλλ' ὁμοίως ἐπ' ἄμφω καὶ πάντῃ, ὅσα ἀεὶ
τρέφεταί τε καὶ ζῇ διὰ τέλους, ἕως ἂν δύνηται λαμβάνειν 30
4 τροφήν. χωρίζεσθαι δὲ τοῦτο μὲν τῶν ἄλλων δυνατόν, τὰ
δ' ἄλλα τούτου ἀδύνατον ἐν τοῖς θνητοῖς. φανερὸν δ' ἐπὶ
τῶν φυομένων· οὐδεμία γὰρ αὐτοῖς ὑπάρχει δύναμις ἄλλη
ψυχῆς. τὸ μὲν οὖν ζῆν διὰ τὴν ἀρχὴν ταύτην ὑπάρχει τοῖς 413b
ζῶσι, τὸ δὲ ζῷον διὰ τὴν αἴσθησιν πρώτως· καὶ γὰρ τὰ
μὴ κινούμενα μηδ' ἀλλάττοντα τόπον, ἔχοντα δ' αἴσθησιν
5 ζῷα λέγομεν καὶ οὐ ζῆν μόνον. αἰσθήσεως δὲ πρῶτον ὑπάρ-
χει πᾶσιν ἁφή. ὥσπερ δὲ τὸ θρεπτικὸν δύναται χωρίζε- 5
σθαι τῆς ἁφῆς καὶ πάσης αἰσθήσεως, οὕτως ἡ ἁφὴ τῶν
ἄλλων αἰσθήσεων. θρεπτικὸν δὲ λέγομεν τὸ τοιοῦτον μόριον
τῆς ψυχῆς οὗ καὶ τὰ φυόμενα μετέχει· τὰ δὲ ζῷα πάντα
φαίνεται τὴν ἁπτικὴν αἴσθησιν ἔχοντα· δι' ἣν δ' αἰτίαν
ἑκάτερον τούτων συμβέβηκεν, ὕστερον ἐροῦμεν. 10

6 νῦν δ' ἐπὶ τοσοῦτον εἰρήσθω μόνον, ὅτι ἐστὶν ἡ ψυχὴ τῶν
εἰρημένων τούτων ἀρχὴ καὶ τούτοις ὥρισται, θρεπτικῷ, αἰσθητικῷ,
7 διανοητικῷ, κινήσει. πότερον δὲ τούτων ἕκαστόν ἐστι ψυχὴ ἢ
μόριον ψυχῆς, καὶ εἰ μόριον, πότερον οὕτως ὥστ' εἶναι χωριστὸν
λόγῳ μόνον ἢ καὶ τόπῳ, περὶ μὲν τινῶν τούτων οὐ χαλεπὸν 15
8 ἰδεῖν, ἔνια δὲ ἀπορίαν ἔχει. ὥσπερ γὰρ ἐπὶ τῶν φυτῶν ἔνια
διαιρούμενα φαίνεται ζῶντα καὶ χωριζόμενα ἀπ' ἀλλήλων,
ὡς οὔσης τῆς ἐν τούτοις ψυχῆς ἐντελεχείᾳ μὲν μιᾶς ἐν ἑκάστῳ
φυτῷ, δυνάμει δὲ πλειόνων, οὕτως ὁρῶμεν καὶ περὶ ἑτέρας
διαφορὰς τῆς ψυχῆς συμβαῖνον ἐπὶ τῶν ἐντόμων ἐν τοῖς 20
διατεμνομένοις· καὶ γὰρ αἴσθησιν ἑκάτερον τῶν μερῶν ἔχει

23. ὑπάρχῃ S W X Philop. || 25. φθίσιν et αὔξησιν S U W X Soph. Trend. Rodier || 29. πάντῃ ἐκτρέφεταί τε καὶ S U X Rodier, πάντῃ ὅσα ἀεὶ τρέφεταί τε καὶ E T et omisso τε W, πάντοσε καὶ τρέφεται καὶ V Bek. Trend., πάντοσε· καὶ τρέφεταί τε καὶ Torst., πάντῃ· καὶ τρέφεται διὰ τέλους καὶ ζῇ P, πάντῃ ὅσα καὶ τρέφεται, καὶ de coniectura scripsit Biehl || 30. post τέλους virgulam Bek. Trend., om. Torst. || 413 b, 1. τοῖς ζ.] πᾶσι τοῖς ζῶσι S U Them. Soph., τοῖς ζῶσι πᾶσι X || 4. ὑπάρχει πρῶτον πᾶσιν S, πᾶσιν ὑπάρχει πρῶτον X, πρῶτον ὑπάρχει πᾶσιν ceteri, etiam P || 5. δὲ] γὰρ X, δὲ etiam Them. Philop. || 8. φυτὰ

single one of these senses, we speak of a thing as living. Thus there is intellect, sensation, motion from place to place and rest, the motion concerned with nutrition and, further, decay and growth. Hence it is that all plants are supposed to have life. For apparently they have within themselves a faculty and principle whereby they grow and decay in opposite directions. For plants do not grow upwards without growing downwards; they grow in both directions equally, in fact in all directions, as many as are constantly nourished and therefore continue to live, so long as they are capable of absorbing nutriment. This form of life can be separated from the others, though in mortal creatures the others cannot be separated from it. In the case of plants the fact is manifest: for they have no other faculty of soul at all.

Various vital functions or operations. (3)

The minimum in plants. (4)

It is, then, in virtue of this principle that all living things live, whether animals or plants. But it is sensation primarily which constitutes the animal. For, provided they have sensation, even those creatures which are devoid of movement and do not change their place are called animals and are not merely said to be alive. Now the primary sense in all animals is touch. But, as the nutritive faculty may exist without touch or any form of sensation, so also touch may exist apart from the other senses. By nutritive faculty we mean the part of the soul in which even plants share. Animals, however, are found universally to have the sense of touch: why this is so in each of the two cases will be stated hereafter.

Sensation in all animals. (5)

For the present it may suffice to say that the soul is the origin of the functions above enumerated and is determined by them, namely, by capacities of nutrition, sensation, thought, and by motion. But whether each one of these is a soul or part of a soul and, if a part, whether it is only logically distinct or separable in space also is a question, the answer to which is in some cases not hard to see: other cases present difficulties. For, just as in the case of plants some of them are found to live when divided and separated from each other (which implies that the soul in each plant, though actually one, is potentially several souls), so, too, when insects or annelida are cut up, we see the same thing happen with other varieties of soul: I mean, each of the segments has sensation and moves from place

(6) (7) (8)

Mutual connection of these functions.

recepit Bek. Trend. || 12. θρεπτικῷ <ὀρεκτικῷ> coni. Susemihl || 13. post κινήσει addendum apodosin putat Steinhart || 15. τούτων om. S U W X Them. Soph. || 18. αὐτοῖς S U V X πρώτως coph.

καὶ κίνησιν τὴν κατὰ τόπον, εἰ δ' αἴσθησιν, καὶ φαντασίαν
καὶ ὄρεξιν· ὅπου μὲν γὰρ αἴσθησις, καὶ λύπη τε καὶ ἡδονή,
9 ὅπου δὲ ταῦτα, ἐξ ἀνάγκης καὶ ἐπιθυμία. περὶ δὲ τοῦ νοῦ
καὶ τῆς θεωρητικῆς δυνάμεως οὐδέν πω φανερόν, ἀλλ' ἔοικε 25
ψυχῆς γένος ἕτερον εἶναι, καὶ τοῦτο μόνον ἐνδέχεται χωρί-
10 ζεσθαι, καθάπερ τὸ ἀΐδιον τοῦ φθαρτοῦ. τὰ δὲ λοιπὰ μόρια
τῆς ψυχῆς φανερὸν ἐκ τούτων ὅτι οὐκ ἔστι χωριστά, καθάπερ
τινές φασιν· τῷ δὲ λόγῳ ὅτι ἕτερα, φανερόν· αἰσθητικῷ
γὰρ εἶναι καὶ δοξαστικῷ ἕτερον, εἴπερ καὶ τὸ αἰσθάνεσθαι 30
τοῦ δοξάζειν. ὁμοίως δὲ καὶ τῶν ἄλλων ἕκαστον τῶν εἰρημέ-
11 νων. ἔτι δ' ἐνίοις μὲν τῶν ζῴων ἅπανθ' ὑπάρχει ταῦτα,
τισὶ δέ τινα τούτων, ἑτέροις δὲ ἓν μόνον (τοῦτο δὲ ποιήσει
διαφορὰν τῶν ζῴων)· διὰ τίνα δ' αἰτίαν, ὕστερον ἐπισκεπτέον. 414a
παραπλήσιον δὲ καὶ περὶ τὰς αἰσθήσεις συμβέβηκεν· τὰ μὲν γὰρ
ἔχει πάσας, τὰ δὲ τινάς, τὰ δὲ μίαν τὴν ἀναγκαιοτάτην, ἁφήν.

12 ἐπεὶ δὲ ᾧ ζῶμεν καὶ αἰσθανόμεθα διχῶς λέγεται,
καθάπερ ᾧ ἐπιστάμεθα (λέγομεν δὲ τὸ μὲν ἐπιστήμην 5
τὸ δὲ ψυχήν, ἑκατέρῳ γὰρ τούτων φαμὲν ἐπίστασθαι),
ὁμοίως δὲ καὶ ᾧ ὑγιαίνομεν τὸ μὲν ὑγιείᾳ τὸ δὲ μορίῳ
τινὶ τοῦ σώματος ἢ καὶ ὅλῳ· τούτων δ' ἡ μὲν ἐπιστήμη
τε καὶ ὑγίεια μορφὴ καὶ εἶδός τι καὶ λόγος καὶ οἷον ἐνέρ-
γεια τοῦ δεκτικοῦ, ἡ μὲν τοῦ ἐπιστημονικοῦ, ἡ δὲ τοῦ ὑγιαστικοῦ 10
(δοκεῖ γὰρ ἐν τῷ πάσχοντι καὶ διατιθεμένῳ ἡ τῶν ποιητι-
κῶν ὑπάρχειν ἐνέργεια)· ἡ ψυχὴ δὲ τοῦτο ᾧ ζῶμεν καὶ
αἰσθανόμεθα καὶ διανοούμεθα πρώτως· ὥστε λόγος τις ἂν εἴη

22. *καὶ φαντασίαν* deleri vult Freudenthal, Ueber den Begriff *φαντασία* bei Arist. p. 8, cui assentiuntur Schieboldt, De imag. disquis., p. 44 et Susemihl, B. J. LXXXVIII, 12, virgulam post *αἴσθησιν* delere, post *φαντασίαν* ponere in scholis maluit H. Jackson || 23. *καὶ* ante *λύπη* om. S U W X Soph. || 25. *οὐδέπω* T U V W X y et Philop. in prooemio ad lib. 1 (11, 1) et ad 411 a, 26 (194, 10), sed hoc loco et ad 415 a, 11 (261, 14. 16) *οὐδέν πω*, quod etiam Them. legit: cf. Them. pp. 46, 4. 102, 12. 103, 7. || 26. *καὶ* om. S. Cf. Heinzii crit. adn. ad Them. 46, 5. 102, 13. 103, 7 [immo, 8] || *ἐνδέχεται* omnes codd. Soph. et Philop. ter hoc loco et ad 411 a, 26 (194, 11), sed ad 415 a, 11 (261, 15) *ἐνδέχεσθαι* et eam quoque scripturam ferri et ab Alexandro legi tradit ad hunc locum Philop., *ἐνδέχεσθαι* etiam Them. 46, 5 || *χωρίζεσθαι* om. X. Cf. Them. l. l. || 33. *τοῦτο...414 a, 1. ζῴων* cum Torst. in parenthesi posuit Biehl || 33. *ποιεῖ* S U X P Simpl. 103, 19 Philop. vet. transl. Bek. Trend. Torst., *ἐποίησε* Soph. || 414 a, 1. *διαφορὰς* T V X P, *διαφορὰν* etiam Philop. Simpl. Soph. || 2. *τὰς* om. E et rc. T, leg. etiam Sop[illegible]. 4. de hoc loco *ἐπεὶ...14. ὑποκείμενον* cf. Bon. stud. Ar. II, III. 120, *ἐπεὶ δὲ...28.* φ[illegible]hl || *ἐκ τούτων* suspecta videntur Susemihlio, Oecon. p. 84, pro *ἐπεὶ δὲ* coni. *ἔτι δὲ* Tren[illegible] S U *δὲ* etiam Soph. || 5. post *ἐπιστάμεθα* virgulam Bek. Trend. Torst., delevit Bon. || [illegible]τον X, [illegible] 8. *φυτὰ*

to place, and, if it has sensation, it has also imagination and appetency. For, where there is sensation, there is also pleasure and pain: and, where these are, desire also must of necessity be present. But as regards intellect and the speculative 9 faculty the case is not yet clear. It would seem, however, to be a distinct species of soul, and it alone is capable of separation from the body, as that which is eternal from that which is perishable. The remaining parts of the soul are, 10 as the foregoing consideration shows, not separable in the way that some allege them to be: at the same time it is clear that they are logically distinct. For the faculties of sensation and of opinion taken in the abstract are distinct, since to have sensation and to opine are distinct. And so it is likewise with each of the other faculties above mentioned. Again, while some animals possess 11 all these functions, others have only some of them, others only one. It is this which will differentiate animal from animal. The reason why this is so must be investigated hereafter. The case is similar with the several senses: some animals have all of them, others some of them, others again only one, the most indispensable, that is, touch.

The case of intellect not clear.

Now "that by which we live and have sensation" is a phrase 12 with two meanings, answering to the two meanings of "that by which we know" (the latter phrase means, firstly, knowledge and, secondly, soul, by either of which we say we know). Similarly that by which we have health means either health itself or a certain part, if not the whole, of the body. Now of these knowledge and health are the shape and in some sort form, the notion and virtual activity, of that which is capable of receiving in the one case knowledge, in the other health: that is to say, it is in that which is acted upon or conditioned that the activity of the causal agencies would seem to take effect. Now the soul is that whereby primarily we live, perceive, and have understanding: therefore it will be a species of

A second deduction of the definition.

6. *ἐπίστασθαι* in parenth. posui || *λέγω* coni. Torst., *λέγομεν* etiam Simpl. et sine dubio Soph. || *δὲ* unc. incl. Bon., cui adversatur Bywater, p. 55 || 6. *ἑκατέρῳ...ἐπίστασθαι* in parenth. posuit Bon. || 7. *ᾧ* unc. incl. Bywater || *ὑγίειαν* X et pr. S, reliqui codd. et Bek. Trend. *ὑγίεια*, *ὑγιείᾳ* de coniect. Trend. a Torst. receptum probat Bon., *ὑγιείᾳ* iam Soph. || 8. *ὅλῳ. τούτων* Bek. Trend., post *ὅλῳ* colon Torst. Bon. || 9. *καὶ* ante *οἷον* om. S U X || 10. *τῶν δεκτικῶν* X Philop. et in paraphr. Them. Simpl. || *ὑγιαστοῦ* X P Simpl. Philop. Soph. 50, 19, quod probat Hayduck. progr. Gryph. 1873 p. 1, recepit Rodier, *ὑγιαστικοῦ* ceteri, etiam Bon. Ind. Ar. s.v. Barco || 12. Torst. incipit apodosin ab *ἡ ψυχή*, Bon. ab *ὥστε* 13, idque recte. || 13. *πρώτως, ὥστε* Bek. Trend., post *πρώτως* colon Torst. Bon.

13 καὶ εἶδος, ἀλλ' οὐχ ὕλη καὶ τὸ ὑποκείμενον. τριχῶς γὰρ
λεγομένης τῆς οὐσίας, καθάπερ εἴπομεν, ὧν τὸ μὲν εἶδος,
τὸ δὲ ὕλη, τὸ δὲ ἐξ ἀμφοῖν, τούτων δ' ἡ μὲν ὕλη δύναμις,
τὸ δὲ εἶδος ἐντελέχεια, ἐπεὶ τὸ ἐξ ἀμφοῖν ἔμψυχον, οὐ
τὸ σῶμά ἐστιν ἐντελέχεια ψυχῆς, ἀλλ' αὕτη σώματός τι-
14 νος. καὶ διὰ τοῦτο καλῶς ὑπολαμβάνουσιν οἷς δοκεῖ μήτ'
ἄνευ σώματος εἶναι μήτε σῶμά τι ἡ ψυχή· σῶμα μὲν 20
γὰρ οὐκ ἔστι, σώματος δέ τι, καὶ διὰ τοῦτο ἐν σώματι
ὑπάρχει, καὶ ἐν σώματι τοιούτῳ, καὶ οὐχ ὥσπερ οἱ πρότε-
ρον εἰς σῶμα ἐνήρμοζον αὐτήν, οὐθὲν προσδιορίζοντες ἐν τίνι
καὶ ποίῳ, καίπερ οὐδὲ φαινομένου τοῦ τυχόντος δέχεσθαι τὸ
15 τυχόν. οὕτω δὲ γίνεται καὶ κατὰ λόγον· ἑκάστου γὰρ ἡ ἐν- 25
τελέχεια ἐν τῷ δυνάμει ὑπάρχοντι καὶ τῇ οἰκείᾳ ὕλῃ πέ-
φυκεν ἐγγίνεσθαι. ὅτι μὲν οὖν ἐντελέχειά τίς ἐστι καὶ λόγος
τοῦ δύναμιν ἔχοντος εἶναι τοιούτου, φανερὸν ἐκ τούτων.

3 Τῶν δὲ δυνάμεων τῆς ψυχῆς αἱ λεχθεῖσαι τοῖς μὲν
ὑπάρχουσι πᾶσαι, καθάπερ εἴπομεν, τοῖς δέ τινες αὐτῶν, 30
ἐνίοις δὲ μία μόνη. δυνάμεις δ' εἴπομεν θρεπτικόν, ὀρε-
2 κτικόν, αἰσθητικόν, κινητικὸν κατὰ τόπον, διανοητικόν. ὑπ-
άρχει δὲ τοῖς μὲν φυτοῖς τὸ θρεπτικὸν μόνον, ἑτέροις δὲ
τοῦτό τε καὶ τὸ αἰσθητικόν. εἰ δὲ τὸ αἰσθητικόν, καὶ τὸ ὀρε- 414b
κτικόν· ὄρεξις μὲν γὰρ ἐπιθυμία καὶ θυμὸς καὶ βούλησις,
τὰ δὲ ζῷα πάντ' ἔχουσι μίαν γε τῶν αἰσθήσεων, τὴν ἁφήν·
ᾧ δ' αἴσθησις ὑπάρχει, τούτῳ ἡδονή τε καὶ λύπη καὶ τὸ
ἡδύ τε καὶ λυπηρόν, οἷς δὲ ταῦτα, καὶ ἡ ἐπιθυμία· τοῦ 5
3 γὰρ ἡδέος ὄρεξις αὕτη. ἔτι δὲ τῆς τροφῆς αἴσθησιν ἔχουσιν·
ἡ γὰρ ἁφὴ τῆς τροφῆς αἴσθησις· ξηροῖς γὰρ καὶ ὑγροῖς
καὶ θερμοῖς καὶ ψυχροῖς τρέφεται τὰ ζῶντα πάντα (τούτων
δ' αἴσθησις ἁφή, τῶν δ' ἄλλων αἰσθητῶν κατὰ συμβεβη-
κός)· οὐθὲν γὰρ εἰς τροφὴν συμβάλλεται ψόφος οὐδὲ χρῶμα 10

14. οὐχὶ ἡ W, οὐχ ὡς S U V X y Simpl. || pro γὰρ coni. δὲ Hayduck. l. l. || 14.... 19. cf. Bon. stud. Ar. II, III. 58 || 16. δ' om. P || 17. post ἐντελ. colon Bek. Trend. Torst., virgulam Bon. || ἐπεὶ τὸ] ἔπειτα τὸ E (Bek. Rr.) ἐπεὶ τὰ τὸ E (Bhl), ut videtur, ἐπεὶ δὲ τὸ S T P Bek. Trend. in ed. pr. Torst., δὲ auctore Trend. om. Belger, quod probat Bon. stud. Ar. II, III. 58, leg. δὲ Them. Philop. || 20. μὲν om. S U X, leg. Them. Soph. || 23. προσδιορίσαντες S U X Soph., προσδιορίζοντες etiam Philop. || 25. οὕτω] τοῦτο Soph. 51, 38, ubi verbatim laudare videtur || 28. τοιουδὶ εἶναι S U X, εἶναι τοιούτου Them. Soph. || 30. ὥσπερ εἴπομεν W, om. E T y, καθάπερ εἴπομεν etiam Them. Soph. || 31. ὀρεκτικὸν post αἰσθητικὸν U V X Them. Belg., vulgatam tuetur Soph. 414 b, 1. αὐτό S W X Soph., τοῦτό etiam Philop. || 2. ὀρέξεις E (Trend.) || 4. καὶ τὸ]

notion or form, not matter or substratum. Of the three meanings 13 of substance mentioned above, form, matter and the whole made up of these two, matter is potentiality and form is actuality. And, since the whole made up of the two is endowed with soul, the body is not the actuality of soul, but soul the actuality of a particular body. Hence those are right who regard the soul as not 14 independent of body and yet at the same time as not itself a species of body. It is not body, but something belonging to body, and therefore resides in body and, what is more, in such and such a body. Our predecessors were wrong in endeavouring to fit the soul into a body without further determination of the nature and qualities of that body: although we do not even find that of any two things taken at random the one will admit the other. And this result is what we might expect. 15 For the actuality of each thing comes naturally to be developed in the potentiality of each thing: in other words, in the appropriate matter. From these considerations, then, it is manifest that soul is a certain actuality, a notion or form, of that which has the capacity to be endowed with soul.

Soul is not independent of, nor identical with, body.

Of the powers of soul above mentioned, namely, those of **3** nutrition, appetency, sensation, locomotion and understanding, some living things, as we remarked, possess all, others some, others again only one. Plants possess 2 the nutritive faculty only: other things along with this have sensation; and, if sensation, then also appetency: where under appetency we include desire, anger and wish. But all animals have at least one sense, touch: and, where sensation is found, there is pleasure and pain, and that which causes pleasure and pain; and, where these are, there also is desire, desire being appetite for what is pleasurable. Again, they have 3 a sensation concerned with nutriment, touch being such a sense. For it is by what is dry and moist, hot and cold, that all living things are nourished (and these qualities are perceived by touch, whereas the other sensibles are not, except incidentally): for sound, colour and odour contribute nothing to nutriment, while flavour

The vital functions: how distributed.

Appetency implied in touch.

κατὰ τὸ coni. Barco || 5. τε om. E T, leg. Simpl. Soph. || καὶ ἡ om. S U, ἡ om. V Philop. 253, 22 sq. Soph. || 6. ὄρεξίς ἐστιν αὕτη S T U X, ἐστὶν ὄρεξις αὕτη Soph., ἐστιν om. etiam Philop. || δὲ om. E W y || 8. ζῷα T U V X Bek. Trend. Torst., ζῶντα etiam Them. Philop. 250, 7 et vet. transl. || τούτων...9. συμβεβηκός in parenth. posui || 9. post ἁφή colon vulg. || τοῖς δ' ἄλλοις αἰσθητοῖς Torst. et Belg. in ed. alt. Trend., secuti Sophoniam, qui interpretatur τοῖς δὲ ἄλλοις τῶν αἰσθητῶν, vulgatam praeter omnes codd. tuentur Simpl. Philop. 252, 36 et Alex. ap. Philop. 253, 13 et, ut videtur, Them. 47, 32 || 10. post συμβεβηκός punctum Biehl Rodier || οὐθὲν...11. ἁπτῶν ἐστὶν ante ξηροῖς...συμβεβηκός collocanda censet Christ || 10. οὐδὲ χρῶμα om. E, tuentur haec verba Them. Philop. Soph.

οὐδὲ ὀσμή, ὁ δὲ χυμὸς ἕν τι τῶν ἁπτῶν ἐστίν. πεῖνα δὲ καὶ
δίψα ἐπιθυμία, καὶ ἡ μὲν πεῖνα ξηροῦ καὶ θερμοῦ, ἡ δὲ
δίψα ψυχροῦ καὶ ὑγροῦ· ὁ δὲ χυμὸς οἷον ἥδυσμά τι τούτων
ἐστίν. διασαφητέον δὲ περὶ αὐτῶν ὕστερον, νῦν δ' ἐπὶ τοσοῦτον
εἰρήσθω, ὅτι τῶν ζῴων τοῖς ἔχουσιν ἁφὴν καὶ ὄρεξις ὑπάρ- 15
4 χει. περὶ δὲ φαντασίας ἄδηλον, ὕστερον δ' ἐπισκεπτέον. ἐνί-
οις δὲ πρὸς τούτοις ὑπάρχει καὶ τὸ κατὰ τόπον κινητικόν,
ἑτέροις δὲ καὶ τὸ διανοητικόν τε καὶ νοῦς, οἷον ἀνθρώποις καὶ
εἴ τι τοιοῦτον ἕτερόν ἐστιν ἢ τιμιώτερον.

5 δῆλον οὖν ὅτι τὸν αὐτὸν τρόπον εἷς ἂν εἴη λόγος ψυχῆς τε καὶ 20
σχήματος· οὔτε γὰρ ἐκεῖ σχῆμα παρὰ τὸ τρίγωνόν ἐστι καὶ τὰ
ἐφεξῆς, οὔτ' ἐνταῦθα ψυχὴ παρὰ τὰς εἰρημένας. γίνοιτο δ' ἂν
καὶ ἐπὶ τῶν σχημάτων λόγος κοινός, ὃς ἐφαρμόσει μὲν πᾶσιν,
ἴδιος δ' οὐδενὸς ἔσται σχήματος. ὁμοίως δὲ καὶ ἐπὶ ταῖς εἰ-
ρημέναις ψυχαῖς. διὸ γελοῖον ζητεῖν τὸν κοινὸν λόγον καὶ 25
ἐπὶ τούτων καὶ ἐφ' ἑτέρων, ὃς οὐδενὸς ἔσται τῶν ὄντων ἴδιος
λόγος οὐδὲ κατὰ τὸ οἰκεῖον καὶ τὸ ἄτομον εἶδος, ἀφέντας τὸν
6 τοιοῦτον. παραπλησίως δ' ἔχει τῷ περὶ τῶν σχημάτων καὶ
τὰ κατὰ ψυχήν· ἀεὶ γὰρ ἐν τῷ ἐφεξῆς ὑπάρχει δυνάμει
τὸ πρότερον ἐπί τε τῶν σχημάτων καὶ ἐπὶ τῶν ἐμψύχων, 30
οἷον ἐν τετραγώνῳ μὲν τρίγωνον, ἐν αἰσθητικῷ δὲ τὸ θρεπτι-
κόν. ὥστε καθ' ἕκαστον ζητητέον, τίς ἑκάστου ψυχή, οἷον τίς
7 φυτοῦ καὶ τίς ἀνθρώπου ἢ θηρίου. διὰ τίνα δ' αἰτίαν τῷ ἐφε-
ξῆς οὕτως ἔχουσι, σκεπτέον. ἄνευ μὲν γὰρ τοῦ θρεπτικοῦ τὸ 415a
αἰσθητικὸν οὐκ ἔστιν· τοῦ δ' αἰσθητικοῦ χωρίζεται τὸ θρεπτικὸν
ἐν τοῖς φυτοῖς. πάλιν δ' ἄνευ μὲν τοῦ ἁπτικοῦ τῶν ἄλλων
αἰσθήσεων οὐδεμία ὑπάρχει, ἁφὴ δ' ἄνευ τῶν ἄλλων ὑπάρ-
χει· πολλὰ γὰρ τῶν ζῴων οὔτ' ὄψιν οὔτ' ἀκοὴν ἔχουσιν 5
οὔτ' ὀσμῆς αἴσθησιν. καὶ τῶν αἰσθητικῶν δὲ τὰ μὲν
ἔχει τὸ κατὰ τόπον κινητικόν, τὰ δ' οὐκ ἔχει. τελευταῖον

11. post *ὀσμή* punctum vulg. || 12. *θερμοῦ καὶ ξηροῦ* S X, *ξηρ. καὶ θερ.* etiam Them. Simpl. Soph. || 13. *ὑγροῦ καὶ ψυχροῦ* X Soph., *καὶ ψυχ. καὶ ὑγρ.* S, *ψυχροῦ καὶ ὑγροῦ* etiam Them. Simpl. || *τι* om. S U V X, leg. Philop. || 15. *διωρίσθω* S U V X Them. Soph. || 18. *κἂν* post *ἀνθρώποις* X Philop. 255, 6, *καὶ* reliqui, etiam Them. Simpl. Soph. || 19. *ἐστιν ἕτερον* S U V Them., *ἕτερόν ἐστιν* ceteri, etiam Simpl. Soph., *ἐστιν* om. Philop. || *ἢ καὶ τιμ.* U X Them. Bek. Trend. Torst., *καὶ* omisso *ἢ* Philop., *καὶ* om. etiam Soph. || 22. *ἡ ψυχὴ* E V y Simpl., *ἡ* om. Soph. || *γένοιτο* S U V X Soph. Bek. Trend. Torst. || 25. *κοινὸν* <*μόνον*> coni. Susemihl, *τῷ κοινῷ λόγῳ ἀρκεῖσθαι μόνῳ* interpretatur Philop. 257, 13. || 26. *ἐστι* S U X P Soph., *ἔσται* Them. || 27. post *λόγος* vulg. virgulam sustuli || *οὐδὲ δεῖ* fort.

is one of the tangible objects. Hunger again, and thirst are forms of desire, the one for what is hot or dry, the other for what is cold or moist. Flavour is, as it were, the seasoning of these. We will deal with these in detail hereafter: at present let it suffice to say that all animals which have the sense of touch are also endowed with appetency. Whether they have imagination is not clear: this, too, must be considered later. Some have in addition 4 the power of locomotion. Others—that is to say, man and any other species like man or, possibly, superior to him—have also the thinking faculty and intellect.

Higher functions.

From this it is clear that there is one definition of soul exactly 5 as there is one definition of figure: for there is in the one case no figure excepting triangle, quadrilateral and the rest, nor is there in the other any species of soul apart from those above mentioned. Again, a definition might be constructed which should apply to all figures, but not specially to any species of figure. And similarly with the species of soul above enumerated. Hence it would be absurd here as elsewhere to seek a general definition which will not be properly a definition of anything in existence and will not be applicable to the particular irreducible species before us, to the neglect of the definition which is so applicable.

A single definition of soul, as of figure.

The types of soul resemble the series of figures. For, alike 6 in figures and in things animate, the earlier form exists potentially in the later, as, for instance, the triangle potentially in the quadrilateral, and the nutritive faculty in that which has sensation. So that we must examine in each case separately, what is the soul of plant, of man or of beast. Why they are related in this order of succession remains 7 to be considered. There is no sensitive faculty apart from the nutritive: and yet the latter exists without the former in plants. Again, none of the other senses is found apart from touch; while touch is found apart from the others, many animals having neither sight nor hearing nor sense of smell. Also of those which possess sensation, some can move from place to place, others cannot.

The ascending scale of vital functions.

Soph. interpretationi accommodatius esse censet Rodier II, 220 || *καὶ τὸ ἄτομον* E T y, *τὸ* om. Simpl. et, ut videtur, Soph. 54, 30. Bek. Trend. Torst. || 28. *καὶ τὰ...30. σχημάτων* om. V || 29. *κατὰ*] *περὶ τὴν* S U V X || 31. *μὲν τὸ τρί.* V Soph. 54, 6 || 32. *ὥστε καὶ καθ'* suscepit Torst. e prima editione E, reliqui omnes om. *καὶ*, etiam Soph. || 33. *τῷ*] *τὸ* P U Soph., om. V || 415 a, 3. *οἷον ἐν τοῖς φυτοῖς* suscepit Torst. e prima editione E, *οἷον* om. reliqui. || 6. *ὀσμῆς ὅλως αἴσθησιν* S T U W X Soph. Bek. Trend., *ὅλως* om. E (Trend.) y Torst. Belger.

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οἷς δ' ἐκείνων ἕκαστον, οὐ πᾶσι λογισμός, ἀλλὰ τοῖς μὲν 10
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λαβεῖν ἕκαστον αὐτῶν τί ἐστιν, εἶθ' οὕτως περὶ τῶν ἐχομένων 15
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αὐτῶν, οἷον τί τὸ νοητικὸν ἢ τὸ αἰσθητικὸν ἢ τὸ θρεπτικόν,
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415 a 8—415 b 5

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[illegible]s [illegible]ative [illegible]ause 3 [illegible]ord- word [illegible]se of [illegible]s final [illegible]ce 4 [illegible] [illegible]wo [M]oreover, 6 [illegible] to place, but not [illegible] motion. Qualitative change, [illegible] is supposed to be a

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Digression on the soul as three-fold cause.

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ξήσεώς τε καὶ φθίσεως ἔχει· οὐδὲν γὰρ φθίνει οὐδ' αὔξεται
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διὰ τὸ τὴν γῆν οὕτω φέρεσθαι κατὰ φύσιν, ἄνω δὲ διὰ τὸ 416 a
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ἔργηtιy we have first to treat of nutriment and of generation.

The nutritive soul belongs to other living things as well as man, being the first and most widely distributed faculty, in virtue of which all things possess life. Its functions are reproduction and assimilation of nutriment. For it is the most natural function in all living things, if perfect and not defective or spontaneously generated, to reproduce their species; animal producing animal and plant plant, in order that they may, so far as they can, share in the eternal and the divine. For it is that which all things yearn after, and that is the final cause of all their natural activity. Here final cause is an ambiguous term, which denotes either the purpose for which, or the person for whom, a thing is done. Since, then, individual things are incapable of sharing continuously in the eternal and the divine, because nothing in the world of perishables can abide numerically one and the same, they partake in the eternal and

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Philop. Soph. || 28. αὐτόματον S U W Soph., αὐτομάτην Them. Simpl. Philop. || 29. μετέχουσιν E (Trend.) et U Soph. v. l. (μετέχωσιν e codd. Hayduck, 57, 1), μετέχωσιν etiam Them. Philop. || 415 b, 1. καὶ ἐκείνου T U V W et E (Bus.) Them., κἀκείνου reliqui ante Biehlium omnes, etiam Soph. || 2. post φύσιν et post 3. ᾧ, pro vulg. punctis, cola posuit Rodier || τὸ δ' οὗ...3. ᾧ unc. incl. Trend. (cf. b, 20), leg. haec verba hoc loco Them. Philop. Simpl. Soph. || 3. ἐπεὶ οὖν...τῇ συνεχείᾳ] καθόσον δύναται· δύναται δὲ τῇ συνεχείᾳ μόνῃ in interpr. Them. 50, 19 || 4. τὸ αὐτὸ S U X Soph., ταὐτὸ Them. || 5. ταύτῃ κοινωνεῖ S U X Them.

divine, each in the only way it can, some more, some less. That is to say, each persists, though not in itself, yet in a representative which is specifically, not numerically, one with it.

Digression on the soul as three-fold cause.

Now the soul is cause and origin of the living body. But cause 3 and origin are terms used in various senses: accordingly soul is cause in the three senses of the word already determined. For the soul is the cause of animate bodies as being in itself the origin of motion, as final cause and as substance. Clearly it is so as substance, substance 4 being the cause of all existence. And for living things existence means life, and it is the soul which is the cause and origin of life. Furthermore, actuality is the notion or form of that which has potential existence. Manifestly, too, the soul is final cause. For 5 nature, like intelligence, acts for a purpose, and this purpose is for it an end. Such an end the soul is in animals, and this in the order of nature, for all the natural bodies are instruments of soul: and this is as true of the bodies of plants as of those of animals, shewing that all are means to the soul as end; where end has two senses, the purpose for which and the person for whom. Moreover, 6 the soul is also the origin of motion from place to place, but not all living things have this power of locomotion. Qualitative change, also, and growth are due to soul. For sensation is supposed to be a sort of qualitative change, and nothing devoid of soul has sensation. The same holds of growth and decay. For nothing undergoes natural decay or growth except it be nourished, and nothing is nourished unless it shares in life.

Error of Empedocles.

Empedocles is mistaken in adding that in plants, in so far as 7 they strike their roots downwards, growth takes place because the earth in them has a natural tendency in this direction and that, when they shoot upwards, it is because the fire in them has a similar tendency upwards. He is wrong in his view of up and down. For up and down are not the same for all individuals as for the universe. On the contrary, the roots of plants correspond to the heads of animals, if we are to

αὐτῆς etiam Philop. Torst. || 18. καὶ ante κατὰ φύσιν excepto U omnes codd., om. Trend., unc. incl. Torst., καὶ leg. etiam Simpl. Soph. || scripsisse Arist. ἔμψυχα σώματα, suspicatur Torst. || 20. διττῶς...21. ᾧ leg. haec verba hoc loco etiam Simpl. Philop. Soph. || 25. ψυχὴν ἔχει S U X Them. Soph., ἔχει ψυχήν W Bek. Trend., μετέχει ψυχῆς E T V Torst. || 26. αὐξάνεται T V X, αὔξεται etiam Them. Philop. || 27. μετέχει ψυχῆς W, μετέχει ζωῆς Philop., κοινωνεῖ ζωῆς Them. Simpl. Soph. || 28. post τοῦτο virg. om. Diels || προσθέσει coni. Karsten, Emped., p. 454 || 29. ῥιζουμένων S U V W X, ῥιζουμένοις T Soph., verbum simplex etiam Them. || 416 a, 3. τὸ αὐτὸ E (Bus.) Them. Simpl. Philop. Torst., ταὐτὸ reliqui, etiam Soph. || καὶ τῷ παντί unc. incl. Susemihl.

εἰ χρὴ τὰ ὄργανα λέγειν ἕτερα καὶ ταὐτὰ τοῖς ἔργοις. 5
πρὸς δὲ τούτοις τί τὸ συνέχον εἰς τἀναντία φερόμενα τὸ πῦρ
καὶ τὴν γῆν; διασπασθήσεται γάρ, εἰ μή τι ἔσται τὸ κω-
λύον· εἰ δ' ἔσται, τοῦτ' ἐστὶν ἡ ψυχὴ καὶ τὸ αἴτιον τοῦ αὐ-
8 ξάνεσθαι καὶ τρέφεσθαι. δοκεῖ δέ τισιν ἡ τοῦ πυρὸς φύσις
ἁπλῶς αἰτία τῆς τροφῆς καὶ τῆς αὐξήσεως εἶναι· καὶ γὰρ 10
αὐτὸ φαίνεται μόνον τῶν σωμάτων ἢ τῶν στοιχείων τρεφό-
μενον καὶ αὐξόμενον. διὸ καὶ ἐν τοῖς φυτοῖς καὶ ἐν τοῖς
ζῴοις ὑπολάβοι τις ἂν τοῦτο εἶναι τὸ ἐργαζόμενον. τὸ δὲ
συναίτιον μέν πώς ἐστιν, οὐ μὴν ἁπλῶς γε αἴτιον, ἀλλὰ
μᾶλλον ἡ ψυχή· ἡ μὲν γὰρ τοῦ πυρὸς αὔξησις εἰς ἄπει- 15
ρον, ἕως ἂν ᾖ τὸ καυστόν, τῶν δὲ φύσει συνισταμένων πάν-
των ἐστὶ πέρας καὶ λόγος μεγέθους τε καὶ αὐξήσεως· ταῦτα
δὲ τῆς ψυχῆς, ἀλλ' οὐ πυρός, καὶ λόγου μᾶλλον ἢ ὕλης.

9 ἐπεὶ δ' ἡ αὐτὴ δύναμις τῆς ψυχῆς θρεπτικὴ καὶ γεννητική,
καὶ περὶ τροφῆς ἀναγκαῖον διωρίσθαι πρῶτον· ἀφορίζεται γὰρ 20
πρὸς τὰς ἄλλας δυνάμεις τῷ ἔργῳ τούτῳ. δοκεῖ δ' εἶναι ἡ
τροφὴ τὸ ἐναντίον τῷ ἐναντίῳ, οὐ πᾶν δὲ παντί, ἀλλ' ὅσα τῶν
ἐναντίων μὴ μόνον γένεσιν ἐξ ἀλλήλων ἔχουσιν ἀλλὰ καὶ
αὔξησιν· γίνεται γὰρ πολλὰ ἐξ ἀλλήλων, ἀλλ' οὐ πάντα
ποσά, οἷον ὑγιὲς ἐκ κάμνοντος. φαίνεται δ' οὐδ' ἐκεῖνα τὸν 25
αὐτὸν τρόπον ἀλλήλοις εἶναι τροφή, ἀλλὰ τὸ μὲν ὕδωρ
τῷ πυρὶ τροφή, τὸ δὲ πῦρ οὐ τρέφει τὸ ὕδωρ. ἐν μὲν οὖν
τοῖς ἁπλοῖς σώμασι ταῦτ' εἶναι δοκεῖ μάλιστα τὸ μὲν
10 τροφὴ τὸ δὲ τρεφόμενον. ἀπορίαν δ' ἔχει· φασὶ γὰρ οἱ
μὲν τὸ ὅμοιον τῷ ὁμοίῳ τρέφεσθαι, καθάπερ καὶ αὐξά- 30
νεσθαι, τοῖς δ' ὥσπερ εἴπομεν τοὔμπαλιν δοκεῖ, τὸ ἐναντίον
τῷ ἐναντίῳ, ὡς ἀπαθοῦς ὄντος τοῦ ὁμοίου ὑπὸ τοῦ ὁμοίου,
τὴν δὲ τροφὴν μεταβάλλειν καὶ πέττεσθαι· ἡ δὲ μετα-
βολὴ πᾶσιν εἰς τὸ ἀντικείμενον ἢ τὸ μεταξύ. ἔτι πάσχει
τι ἡ τροφὴ ὑπὸ τοῦ τρεφομένου, ἀλλ' οὐ τοῦτο ὑπὸ τῆς 35

5. post *ἔργοις* addunt edit. Ald. et Basil.: *τὸ δ' αὐτὸ λέγειν ὄργανον ᾧ ἂν ᾖ τὸ αὐτὸ ἔργον*, quae fluxisse e prima editione iudicat Torst., nihil huius additamenti habent veteres interpretes || 7. *κωλῦσον* S U V W Soph. Bek. Trend. || 11. *ἢ τῶν στοιχείων* unc. incl. Torst., leg. haec verba omissis verbis *τῶν σωμάτων ἢ* Them. Simpl., Soph. habet *τῶν σωμ. καὶ τῶν στοιχ.* 59, 33 || 12. *αὐξανόμενον* S U V W X Them., *αὐξόμενον* etiam Philop. Soph. || 15. *ἡ* ante *ψ.* insert. E_1 (Bhl.), leg. Them. || 17. *μεγέθους τε καὶ*] *τε* om. T U V X, *καὶ μεγέθους καὶ* S Them. || 18. *τῆς* om. S U V W X Bek. Trend. Them. Soph. et, ut videtur, Philop. 278, 9 || 20. *καὶ περὶ* E T W, *καὶ* om. Philop. Them. Bek. Trend.

make identity and diversity of organs depend upon their functions. Besides, what is it that holds together the fire and the earth, tending, as they do, in opposite directions? For they will be rent asunder, unless there is something to prevent it: while, if there is, it is this which is the soul and the cause of growth and nourishment.

Fire not the cause of growth.

8 Some hold the nature of fire to be singly and solely the cause of nourishment and growth. For it would seem that fire is the only body or element which of itself is nourished and grows. Hence fire might be supposed to be the operative cause, both in plants and animals. Whereas, though it is in a sense a joint cause, it is not a cause absolutely: it is rather the soul which is so. For fire goes on growing to infinity, as long as there is fuel to be consumed, but in natural wholes there is always a limit or proportion which determines growth and size. But this belongs to the soul and not to fire, to form rather than to matter.

Nutrition.

9 The nutritive faculty of the soul being the same as the reproductive, it is necessary first to give a definition of nutriment. For it is by the nutritive function that this faculty is separated off from the others. The common view is that contrary is nutriment to contrary; though not in every case, but wherever each of two contraries is not only generated by, but derives growth from, the other. For many things are derived from one another, but not all of them are quantities: thus the sick man becomes well. But it is found that even the contraries supposed to derive growth from each other are not fed by one another in the same way: while water serves to feed fire, fire is not nutriment to water. It would seem, then, that it is in the simple bodies above all that of two contraries one is nutriment and the other is nourished. 10 Yet here is a difficulty. It is said by the one side that like is nourished by, as well as derives its growth from, like; while the others, again, as we explained, hold that contrary is nourished by contrary, on the ground that like cannot be affected by like, while food undergoes change and is digested. Now change is always in the direction of the opposite, or of the intermediate state. Further, nutriment is acted upon by that which it nourishes, and not the latter by the former: just as

Torst. || διορίσαι U W Soph., διορίσασθαι y Them., διωρίσθαι etiam Philop. || 23. γέννησιν E, γένεσιν Soph. et, ut videtur, Them. 51, 30 || 24. πάντα om. S U X y et corr. E || 25. ποσά om. U W, in rasura E (Trend.) || 28. ἄλλοις S U X Philop., ἁπλοῖς etiam Soph. || 32. ὑπὸ τοῦ ὁμοίου om. E W, tuentur Them. Philop. || 34. τὸ post ἤ insert. E (Stapf.), καὶ τὸ Them. codd. (ex Arist. corr. ἢ τὸ Heinze) Philop.

τροφῆς, ὥσπερ οὐδ' ὁ τέκτων ὑπὸ τῆς ὕλης, ἀλλ' ὑπ' ἐκεί- 416b
νου αὕτη· ὁ δὲ τέκτων μεταβάλλει μόνον εἰς ἐνέργειαν ἐξ
11 ἀργίας. πότερον δ' ἐστὶν ἡ τροφὴ τὸ τελευταῖον προσγινό-
μενον ἢ τὸ πρῶτον, ἔχει διαφοράν. εἰ δ' ἄμφω, ἀλλ' ἡ
μὲν ἄπεπτος ἡ δὲ πεπεμμένη, ἀμφοτέρως ἂν ἐνδέχοιτο τὴν 5
τροφὴν λέγειν· ᾗ μὲν γὰρ ἄπεπτος, τὸ ἐναντίον τῷ ἐναν-
τίῳ τρέφεται, ᾗ δὲ πεπεμμένη, τὸ ὅμοιον τῷ ὁμοίῳ. ὥστε
φανερὸν ὅτι λέγουσί τινα τρόπον ἀμφότεροι καὶ ὀρθῶς καὶ
12 οὐκ ὀρθῶς. ἐπεὶ δ' οὐθὲν τρέφεται μὴ μετέχον ζωῆς, τὸ ἔμ-
ψυχον ἂν εἴη σῶμα τὸ τρεφόμενον, ᾗ ἔμψυχον, ὥστε καὶ 10
13 ἡ τροφὴ πρὸς ἔμψυχόν ἐστι καὶ οὐ κατὰ συμβεβηκός. ἔστι
δ' ἕτερον τροφῇ καὶ αὐξητικῷ εἶναι· ᾗ μὲν γὰρ ποσόν τι
τὸ ἔμψυχον, αὐξητικόν, ᾗ δὲ τόδε τι καὶ οὐσία, τροφή·
σώζει γὰρ τὴν οὐσίαν, καὶ μέχρι τούτου ἐστὶν ἕως ἂν
τρέφηται· καὶ γενέσεως ποιητικόν, οὐ τοῦ τρεφομένου, ἀλλ' 15
οἷον τὸ τρεφόμενον· ἤδη γάρ ἐστιν αὐτοῦ ἡ οὐσία, γεννᾷ δ'
οὐθὲν αὐτὸ ἑαυτό, ἀλλὰ σώζει. ὥσθ' ἡ μὲν τοιαύτη τῆς
ψυχῆς ἀρχὴ δύναμίς ἐστιν οἵα σώζειν τὸ ἔχον αὐτὴν ᾗ
τοιοῦτον, ἡ δὲ τροφὴ παρασκευάζει ἐνεργεῖν. διὸ στερηθὲν
14 τροφῆς οὐ δύναται εἶναι. ἐπεὶ δ' ἐστὶ τρία, τὸ τρεφόμενον 20
καὶ ᾧ τρέφεται καὶ τὸ τρέφον, τὸ μὲν τρέφον ἐστὶν ἡ
πρώτη ψυχή, τὸ δὲ τρεφόμενον τὸ ἔχον ταύτην σῶμα, ᾧ
15 δὲ τρέφεται, ἡ τροφή. ἐπεὶ δὲ ἀπὸ τοῦ τέλους ἅπαντα
προσαγορεύειν δίκαιον, τέλος δὲ τὸ γεννῆσαι οἷον αὐτό,
16 εἴη ἂν ἡ πρώτη ψυχὴ γεννητικὴ οἷον αὐτό. ἔστι δὲ ᾧ τρέ- 25
φεται διττόν, ὥσπερ καὶ ᾧ κυβερνᾷ, καὶ ἡ χεὶρ καὶ τὸ πη-
δάλιον, τὸ μὲν κινοῦν καὶ κινούμενον, τὸ δὲ κινούμενον <μόνον>.

416 b, 3. προσκρινόμενον in interpr. Them. Philop., προσγινόμενον etiam Soph. || 11. πρὸς τὸ ἐμψ. Them. Simpl., post ἔμψυχον addendum ᾗ ἔμψυχον aut καὶ delendum censet Susemihl || 12. τροφὴ E Soph. v. l. (τροφῇ e codd. Hayduck 62, 6), τροφῇ etiam Them. || 14. ἂν καὶ τρέφηι T W, ἂν τρέφῃ E (Stapf.), ἂν τρέφηται P Soph., ἂν τρέφῃ y, vulgo ἂν καὶ τρέφηται || 15. γεννήσεως E S Soph., γενέσεως etiam Them. Philop. || post ποιητικόν virgulam posuit Torst. || 16. αὐτοῦ ἡ οὐσία S T V W X Soph., ἡ οὐσία αὐτοῦ Philop., αὐτὴ ἡ οὐσία E U vet. transl. Bek. Trend., Them. interpretatur τοῦτο γάρ ἐστιν, unc. incl. haec verba Torst. || 17. αὐτὸ om. E (Trend.) et T V W, leg. Philop. Soph. || 18. ἔχον etiam Philop. Soph., δεχόμενον E W y || 22. ταύτην T X y et E (Bus.) et, ut videtur, Them. 53, 19, αὐτὴν reliqui ante Biehlium omnes, etiam Philop. Soph. || 23. ἐπεὶ δὲ...25. αὐτό collocanda esse ante 20 ἐπεὶ censet Torst., eodem loco, quo vulgata, haec verba legerunt Them. Philop. Soph. || 25. γεννητικὸν E S T W X, γεννητικὴ etiam Soph. || τρέφει T y et, ut videtur, Them. 53, 26, τρέφεται etiam Soph. ||

the carpenter is not affected by his material, but on the contrary the material by the carpenter. The carpenter merely passes to activity from inaction. But it makes a difference whether by 11 nutriment we mean the final, or the primary, form of what is added. If both are nutriment, the one as undigested, the other as digested, it will be possible to use the term nutriment in conformity with both theories. For, in so far as it is undigested, contrary is nourished by contrary: and, in so far as it is digested, like by like. So that clearly both sides are in a manner partly right and partly wrong. But, since nothing is nourished unless it possesses life, 12 that which is nourished must be the animate body as such: so that nutriment also is relative to the animate being which it nourishes: and this not incidentally merely.

Growth.

There is, however, a difference between nutritivity and con- 13 ducivity to growth. In so far as the animate thing is quantitative, what is taken promotes growth; in so far as it is a definite individual, what is taken nourishes. For the animate thing preserves its substance or essential nature and exists as long as it is nourished: and it causes the production, not of that which is nourished, but of another individual like it. Its essential nature already exists, and nothing generates itself, it only maintains its existence. Hence the above described principle of the soul is the power to preserve in existence that which possesses it in so far as it is a definite individual, while nutrition prepares it for activity. Therefore it cannot live when deprived of nutriment. There are, then, these three things, that which is nourished, that 14 with which it is nourished, and that which nourishes it. The last of the three is the primary soul, that which is nourished is the body which contains the soul, that wherewith it is nourished is nutriment. As, however, it is right to name all things from the 15 end they subserve, and the end here is reproduction of the species, the primary soul is that which is capable of reproducing the species. That with which the living thing is nourished may be 16 understood in two senses, just as that with which one steers may mean the hand or the rudder; the former, the hand, both causing motion and being moved, the latter,

Vital heat and nutriment.

26. *καὶ* ante *ᾧ* om. SUWX ‖ *καὶ ἡ χεὶρ* EVy, *καὶ* om. reliqui et scripti et ante Biehlium impressi omnes, leg. Simpl. et sine dubio Them., qui interpretatur *τῇ τε χειρὶ καὶ* ‖ 27. *κινούμενον* <*μόνον*>] *κινούμενον* E sine rasura (Trend.) Rodier, reliqui codd. *κινοῦν μόνον*, etiam Simpl. Alex., teste Philopono, vet. transl., Bek. Trend. Torst., *κινούμενον μόνον*, ut videtur, Them. 53, 30 sqq., *κινούμενον μόνον* interpretatur Philop., *κινούμενον μόνως* Soph., *κινούμενον μόνον* defendit etiam Dittenberger p. 1613.

πᾶσαν δ' ἀναγκαῖον τροφὴν δύνασθαι πέττεσθαι, ἐργάζεται
δὲ τὴν πέψιν τὸ θερμόν· διὸ πᾶν ἔμψυχον ἔχει θερμότητα.
τύπῳ μὲν οὖν ἡ τροφὴ τί ἐστιν εἴρηται· διασαφητέον δ' 30
ἐστὶν ὕστερον περὶ αὐτῆς ἐν τοῖς οἰκείοις λόγοις.

5 Διωρισμένων δὲ τούτων λέγωμεν κοινῇ περὶ πάσης αἰ-
σθήσεως. ἡ δ' αἴσθησις ἐν τῷ κινεῖσθαί τε καὶ πάσχειν
συμβαίνει, καθάπερ εἴρηται· δοκεῖ γὰρ ἀλλοίωσίς τις εἶ-
ναι. φασὶ δέ τινες καὶ τὸ ὅμοιον ὑπὸ τοῦ ὁμοίου πάσχειν. 35
τοῦτο δὲ πῶς δυνατὸν ἢ ἀδύνατον, εἰρήκαμεν ἐν τοῖς καθόλου 417a
2 λόγοις περὶ τοῦ ποιεῖν καὶ πάσχειν. ἔχει δ' ἀπορίαν διὰ τί
καὶ τῶν αἰσθήσεων αὐτῶν οὐ γίνεται αἴσθησις, καὶ διὰ τί
ἄνευ τῶν ἔξω οὐ ποιοῦσιν αἴσθησιν, ἐνόντος πυρὸς καὶ γῆς καὶ
τῶν ἄλλων στοιχείων, ὧν ἐστὶν ἡ αἴσθησις καθ' αὑτὰ ἢ τὰ 5
συμβεβηκότα τούτοις. δῆλον οὖν ὅτι τὸ αἰσθητικὸν οὐκ ἔστιν
ἐνεργείᾳ, ἀλλὰ δυνάμει μόνον. διὸ καθάπερ τὸ καυστὸν οὐ
καίεται αὐτὸ καθ' αὑτὸ ἄνευ τοῦ καυστικοῦ· ἔκαιε γὰρ ἂν
ἑαυτό, καὶ οὐθὲν ἐδεῖτο τοῦ ἐντελεχείᾳ πυρὸς ὄντος. ἐπειδὴ
δὲ τὸ αἰσθάνεσθαι λέγομεν διχῶς (τό τε γὰρ δυνάμει ἀκοῦον 10
καὶ ὁρῶν ἀκούειν καὶ ὁρᾶν λέγομεν, κἂν τύχῃ καθεῦδον, καὶ
τὸ ἤδη ἐνεργοῦν), διχῶς ἂν λέγοιτο καὶ ἡ αἴσθησις, ἡ μὲν
ὡς δυνάμει, ἡ δὲ ὡς ἐνεργείᾳ. ὁμοίως δὲ καὶ τὸ αἰσθάνε-
3 σθαι, τό τε δυνάμει ὂν καὶ τὸ ἐνεργείᾳ. πρῶτον μὲν οὖν ὡς
τοῦ αὐτοῦ ὄντος τοῦ πάσχειν καὶ τοῦ κινεῖσθαι καὶ τοῦ ἐνεργεῖν 15
λέγωμεν· καὶ γὰρ ἔστιν ἡ κίνησις ἐνέργειά τις, ἀτελὴς μέν-
τοι, καθάπερ ἐν ἑτέροις εἴρηται. πάντα δὲ πάσχει καὶ κινεῖται
ὑπὸ τοῦ ποιητικοῦ καὶ ἐνεργείᾳ ὄντος. διὸ ἔστι μὲν ὡς ὑπὸ τοῦ
ὁμοίου πάσχει, ἔστι δὲ ὡς ὑπὸ τοῦ ἀνομοίου, καθάπερ εἴπο-
μεν· πάσχει μὲν γὰρ τὸ ἀνόμοιον, πεπονθὸς δ' ὅμοιόν ἐστιν. 20

32. *λέγομεν* V W X Them. Soph., *λέγωμεν* etiam Alex. *ἀπ. καὶ λύσ.* 82, 23 || 33. *τε*] *τι* S T W X et sine dubio Them. Simpl. Marchl, Arist. Tierseele, p. 17, 3, *τι τὸ αἰσθητήριον* V, Alex. variat, l. l. p. 82, 27 et 86, 20 *τι*, sed p. 86, 5 *τε* || 417 a, 1. *εἴρηται* V, *εἴρηται μὲν* Simpl. Philop. ad hunc locum et Alex. ap. Philop., *εἴρηται μὲν καὶ* S et ad 417 a, 14. Philop., *εἰρήκαμεν καὶ* T W X, reliqui *εἰρήκαμεν*, etiam, ut videtur, Soph. 63, 23 || *καὶ ἐν* S T U W X || 2. post *πάσχειν* Alex. ap. Philop. tradit ferri etiam lectionem: *λεκτέον δὲ καὶ νῦν*, quod additamentum fort. leg. et Them. et Soph., non leg. Simpl. Philop. || 3. *οὐ* post 2. *τί* S U X || 4. *αἰσθήσεις* S U X || 7. *διὸ* om. V W, leg. Philop. ad 417 b, 16. || *καθάπερ*] *καὶ καθάπερ* U, *οὐκ αἰσθάνεται καθάπερ* T X, *καθάπερ οὐκ αἰσθάνεται* S || 8. *καθ' ἑαυτὸ* E Torst., *ὑφ' ἑαυτοῦ* S Them., *ὑφ' αὑτοῦ* U V, *καθ' αὑτὸ* etiam Soph. || 9. *αὑτό* U X || 10. *τὸ αἰσθανόμενον* Soph. || *ἀκοῦον καὶ ὁρῶν* omnes codd., etiam E (Trend. et, Torstrikio teste, Bek.) || 13. *δύναμις* et *ἐνέργεια* P || *ὁμοίως*...14. *ἐνεργείᾳ*, quae

the rudder, being simply moved. Now it is necessary that all food should be capable of digestion, and digestion is promoted by heat; this explains why every animate thing has warmth. This, then, is an outline of what nutriment is. It must be more clearly defined hereafter in the discussion devoted specially to it.

Sensation.

5 Now that these points have been determined, let us proceed to a general discussion of all sensation. As above remarked, sensation consists in being moved and acted upon, for it is held to be a species of qualitative change. Some add that like is in fact acted upon by like. How far this is possible or impossible we have explained in the general discussion of action and passivity. 2 The question arises why there is no sensation of the senses themselves: that is, why they produce no sensation apart from external sensibles, though the senses contain fire, earth and the other elements, which are the objects of sensation either in themselves or through their attributes. Evidently it follows that the faculty of sensible perception exists not in activity, but only in potentiality. Hence it must be here as with the fuel which does not burn of and in itself without something to make it burn; otherwise it would kindle itself and would have no need of the fire which is actually existent. Now to have sensation has two meanings: we use the terms hearing and seeing of that which has the capacity to hear and see, even though it be at the time asleep, just as we do of that which already actually hears and sees. And therefore sensation, too, will have two meanings: it may mean either potential or actual sensation. Similarly with having sensation, whether potential or actual.

Sensation is (1) potential, (2) actual.

Agent and patient.

3 Let us then first proceed on the assumption that to be acted upon or moved is identical with active operation. For movement is in fact active operation of some sort, though incomplete, as we have elsewhere explained. But in every case things are acted upon and moved by an agent in actual operation. It follows that in one sense what is acted upon is acted upon by what is like it, in another sense by what is unlike it, as we have explained. That is to say, while being acted upon it is unlike, after it has been acted upon it is like the agent.

Trend. suspecta videntur, unc. incluserunt Biehl Rodier, αἰσθητόν pro αἰσθάνεσθαι scripsit Torst. ex Alex. ἀπ. καὶ λύσ. 83, 6, probat Brentano, die Psych. des Arist. 141, recepit etiam Rodier, totum hunc locum leg. etiam Them. Philop. vet. transl., defendit Barco, Aristotele, dell' anima vegetativa e sensitiva p. 43 || 15. post πάσχειν addendum τε censet Susemihl || τοῦ ante ἐνεργεῖν om. E V W y Philop. Soph. || 16. λέγομεν S T U W X y Simpl. Philop. Soph. || 17. πάντα...20. ἐστιν secludenda censet Susemihl.

4 διαιρετέον δὲ καὶ περὶ δυνάμεως καὶ ἐντελεχείας· νῦν γὰρ ἁπλῶς λέγομεν περὶ αὐτῶν. ἔστι μὲν γὰρ οὕτως ἐπιστῆμόν τι ὡς ἂν εἴποιμεν ἄνθρωπον ἐπιστήμονα, ὅτι ὁ ἄνθρωπος τῶν ἐπιστημόνων καὶ ἐχόντων ἐπιστήμην· ἔστι δ' ὡς ἤδη λέγομεν ἐπιστήμονα τὸν ἔχοντα τὴν γραμματικήν· 25 ἑκάτερος δὲ τούτων οὐ τὸν αὐτὸν τρόπον δυνατός ἐστιν, ἀλλ' ὁ μὲν ὅτι τὸ γένος τοιοῦτον καὶ ἡ ὕλη, ὁ δ' ὅτι βουληθεὶς δυνατὸς θεωρεῖν, ἂν μή τι κωλύσῃ τῶν ἔξωθεν· ὁ δ' ἤδη θεωρῶν, ἐντελεχείᾳ ὢν καὶ κυρίως ἐπιστάμενος τόδε τὸ Α. ἀμφότεροι μὲν οὖν οἱ πρῶτοι κατὰ δύναμιν ἐπιστήμονες, 30 ἀλλ' ὁ μὲν διὰ μαθήσεως ἀλλοιωθεὶς καὶ πολλάκις ἐξ ἐναντίας μεταβαλὼν ἕξεως, ὁ δὲ ἐκ τοῦ ἔχειν τὴν αἴσθησιν ἢ τὴν γραμματικήν, μὴ ἐνεργεῖν δ' εἰς τὸ ἐνεργεῖν ἄλλον 417b 5 τρόπον. οὐκ ἔστι δ' ἁπλοῦν οὐδὲ τὸ πάσχειν, ἀλλὰ τὸ μὲν φθορά τις ὑπὸ τοῦ ἐναντίου, τὸ δὲ σωτηρία μᾶλλον τοῦ δυνάμει ὄντος ὑπὸ τοῦ ἐντελεχείᾳ ὄντος καὶ ὁμοίου οὕτως ὡς δύναμις ἔχει πρὸς ἐντελέχειαν· θεωροῦν γὰρ γίγνεται τὸ ἔχον 5 τὴν ἐπιστήμην, ὅπερ ἢ οὐκ ἔστιν ἀλλοιοῦσθαι (εἰς αὑτὸ γὰρ ἡ ἐπίδοσις καὶ εἰς ἐντελέχειαν) ἢ ἕτερον γένος ἀλλοιώσεως. διὸ οὐ καλῶς ἔχει λέγειν τὸ φρονοῦν, ὅταν φρονῇ, ἀλλοιοῦσθαι, ὥσπερ οὐδὲ τὸν οἰκοδόμον ὅταν οἰκοδομῇ. τὸ μὲν οὖν εἰς ἐντελέχειαν ἄγον ἐκ δυνάμει ὄντος κατὰ τὸ νοοῦν καὶ 10 φρονοῦν οὐ διδασκαλίαν ἀλλ' ἑτέραν ἐπωνυμίαν ἔχειν δίκαιον· τὸ δ' ἐκ δυνάμει ὄντος μανθάνον καὶ λαμβάνον ἐπιστήμην ὑπὸ τοῦ ἐντελεχείᾳ ὄντος καὶ διδασκαλικοῦ ἤτοι οὐδὲ

21. *νῦν μὲν γὰρ* T W, *μὲν* om. Soph., *οὐ γὰρ ἁπλῶς* coni. Roeper in Philol. VII, p. 238 || 22. *ἐλέγομεν* coni. Torst., *λέγομεν* etiam Philop. Soph. || 23. *εἴπωμεν* E T U V W y, *εἴποιμεν* etiam Soph. || 24. *καὶ τῶν ἐχ.* S U X || 25. *ἤδη* hoc loco positum suspectum videtur Torst., defendit Vahlen, Arist. Aufsätze II, p. 26 || 26. *ἑκάτερος*...28. *ἔξωθεν* in parenth. Torst., quod vituperat Vahlen l. l. || 27. om. *ἡ* Simpl. 121, 19, leg. etiam Philop. Soph. || 28. *κωλύῃ* Simpl., *κωλύσῃ* etiam Philop. || *τρίτος δ' ὁ ἤδη* e Soph. scripsit Torst., *τρίτος δ'* habet etiam Them., sed haud dubie per interpretamentum, vulgatam defendit Vahlen l. l. || 29. post *θεωρῶν* virgulam Torst. || *ἄλφα* literis scriptum E (Trend.) || 30. *πρῶτοι* unc. incl. Torst., tuentur Simpl. Soph. et sine dubio Them. 55, 24 || Torst. coni. *ἀμφότεροι μὲν οὖν οἱ κατὰ δύναμιν ἐπιστήμονες ἐνεργείᾳ γίνονται ἐπιστήμονες, ἀλλ'*, tuetur vulgatam etiam Soph. || 32. pro *αἴσθησιν* coni. Torst. *ἀριθμητικήν*, quod re vera habet Them., *αἴσθησιν* leg. Philop. Simpl. Soph. || 417 b, 4. virgulam post *ὁμοίου* (Bek. Trend.) delevit Torst. || 5. *γὰρ* tuentur praeter omnes codd. Them. Simpl. Philop. Alex. *ἀπ. καὶ λύσ.* 80, 4. 81, 11. 84, 7 || 6. *τὴν* om. S X Alex. 80, 4, leg. Them. Philop. Alex. 81, 11. 84, 7 || *ἑαυτὸ* X Soph., *αὑτὸ* Trend., probat Beare, Greek Theories, p. 234, adn. 2, *αὐτὸ* leg.

4 We must also draw a distinction in regard to the terms potentiality and actuality: at present we are using them without qualification. For instance, we may use the term wise, firstly, in the sense in which we might speak of man as wise, because man is one of the genus of beings which are wise and have wisdom; secondly, in the sense in which we at once call the man wise who has learnt, say, grammar. Now of these two men each possesses the capacity, but in a different sense: the one because the genus to which he belongs, that is to say, his matter, is potentially wise; the other because he is capable, if he chose, of applying the wisdom he has acquired, provided there is nothing external to hinder. Whereas he who is at the moment exercising his wisdom is in actuality and is wise in the proper sense of the term: for example, he knows the A before him. Thus the first two are both potentially wise: the first becomes wise actually after he has undergone qualitative change through instruction and often after transition from the reverse condition; while in the latter case it is by another kind of transition that the man passes from the mere possession, without the use, of sensation or grammar to the use of it.

Two meanings of potentiality

5 To suffer or be acted upon, too, is a term of more than one meaning. Sometimes it means a sort of destruction by the contrary, sometimes it is rather a preservation of what is potentially existent by what is actually existent and like it, so far as likeness holds of potentiality when compared with actuality. For it is by exercise of knowledge that the possessor of knowledge becomes such in actuality: and this either is no qualitative change (for the thing develops into its own nature and actuality), or else is qualitative change of a different sort. Hence it is not right to say that that which thinks undergoes change when it thinks, any more than that the builder undergoes change when he builds. That, then, which works the change from potential existence to actuality in a thinking and intelligent being should properly receive a different name and not be called instruction: while that which learns and is brought from potential to actual knowledge by that which is in actuality and capable of instructing should either not be said to suffer or be acted upon at

and of being acted upon.

Simpl. Philop. Them. 55, 38. 28, 30. Alex. 81, 12. 84, 10 || 9. τὸ μὲν...11. δίκαιον suspecta videntur Hayduckio, progr. Meldorf 1877, p. 11 || 10. Torst., cui assentitur Susemihl, coni. ἄγειν, leg. ἄγον Alex. 81, 15 et, ut videtur, Philop. 304, 6. 306, 2 || κατὰ unc. incl. Torst., leg. Alex. 81, 15 || 12. ἐκ δυνάμει ὄντος unc. incl. Torst., tuentur Philop. Soph. Them. 28, 29 sq. || 13. Hayduck l. l. legendum esse censet: οὐδὲ τοῦτο πάσχειν.

πάσχειν φατέον, [ὥσπερ εἴρηται,] ἢ δύο τρόπους εἶναι ἀλ-
λοιώσεως, τήν τε ἐπὶ τὰς στερητικὰς διαθέσεις μεταβολὴν 15
6 καὶ τὴν ἐπὶ τὰς ἕξεις καὶ τὴν φύσιν. τοῦ δ' αἰσθητικοῦ ἡ μὲν
πρώτη μεταβολὴ γίνεται ὑπὸ τοῦ γεννῶντος, ὅταν δὲ γεν-
νηθῇ, ἔχει ἤδη ὥσπερ ἐπιστήμην καὶ τὸ αἰσθάνεσθαι. καὶ
τὸ κατ' ἐνέργειαν δὲ ὁμοίως λέγεται τῷ θεωρεῖν· διαφέρει
δέ, ὅτι τοῦ μὲν τὰ ποιητικὰ τῆς ἐνεργείας ἔξωθεν, τὸ ὁρατὸν 20
καὶ τὸ ἀκουστόν, ὁμοίως δὲ καὶ τὰ λοιπὰ τῶν αἰσθητῶν.
αἴτιον δ' ὅτι τῶν καθ' ἕκαστον ἡ κατ' ἐνέργειαν αἴσθησις, ἡ
δ' ἐπιστήμη τῶν καθόλου· ταῦτα δ' ἐν αὐτῇ πώς ἐστι τῇ
ψυχῇ. διὸ νοῆσαι μὲν ἐπ' αὐτῷ, ὁπόταν βούληται, αἰσθά-
νεσθαι δ' οὐκ ἐπ' αὐτῷ· ἀναγκαῖον γὰρ ὑπάρχειν τὸ αἰσθη- 25
τόν. ὁμοίως δὲ τοῦτ' ἔχει κἀν ταῖς ἐπιστήμαις ταῖς τῶν αἰ-
σθητῶν, καὶ διὰ τὴν αὐτὴν αἰτίαν, ὅτι τὰ αἰσθητὰ τῶν καθ'
ἕκαστα καὶ τῶν ἔξωθεν. ἀλλὰ περὶ μὲν τούτων διασα-
7 φῆσαι καιρὸς γένοιτ' ἂν καὶ εἰσαῦθις. νῦν δὲ διωρίσθω
τοσοῦτον, ὅτι οὐχ ἁπλοῦ ὄντος τοῦ δυνάμει λεγομένου, 30
ἀλλὰ τοῦ μὲν ὥσπερ ἂν εἴποιμεν τὸν παῖδα δύνασθαι
στρατηγεῖν, τοῦ δὲ ὡς τὸν ἐν ἡλικίᾳ ὄντα, οὕτως ἔχει τὸ
αἰσθητικόν. ἐπεὶ δ' ἀνώνυμος αὐτῶν ἡ διαφορά, διώρισται 418a
δὲ περὶ αὐτῶν ὅτι ἕτερα καὶ πῶς ἕτερα, χρῆσθαι ἀναγκαῖον τῷ
πάσχειν καὶ ἀλλοιοῦσθαι ὡς κυρίοις ὀνόμασιν. τὸ δ' αἰσθη-
τικὸν δυνάμει ἐστὶν οἷον τὸ αἰσθητὸν ἤδη ἐντελεχείᾳ, καθά-
περ εἴρηται. πάσχει μὲν οὖν οὐχ ὅμοιον ὄν, πεπονθὸς δ' 5
ὡμοίωται καὶ ἔστιν οἷον ἐκεῖνο.

6 Λεκτέον δὲ καθ' ἑκάστην αἴσθησιν περὶ τῶν αἰσθητῶν
πρῶτον. λέγεται δὲ τὸ αἰσθητὸν τριχῶς, ὧν δύο μὲν καθ'
αὑτά φαμεν αἰσθάνεσθαι, τὸ δὲ ἓν κατὰ συμβεβηκός. τῶν
δὲ δύο τὸ μὲν ἴδιόν ἐστιν ἑκάστης αἰσθήσεως, τὸ δὲ κοινὸν 10
2 πασῶν. λέγω δ' ἴδιον μὲν ὃ μὴ ἐνδέχεται ἑτέρᾳ αἰσθήσει
αἰσθάνεσθαι, καὶ περὶ ὃ μὴ ἐνδέχεται ἀπατηθῆναι (οἷον

14. ὥσπερ εἴρηται praeeunte Hayduckio unc. incl. Biehl, om. S U X Alex. 84, 26 Them. Philop., leg. quidem Soph., fort. post ἢ transponenda censet Susemihl || 18. καὶ post αἰσθ. om. E U, καὶ τὸ om. V, leg. καὶ τὸ Simpl. Philop. Alex. 85, 3 || 19. δὲ om. S V, post ὁμοίως ponit E, κατ' ἐνέργειαν δὲ leg. etiam Philop. Alex. 85, 4 || 24. ὅταν V W X Soph. || 31. εἴπωμεν S U X, εἴποιμεν etiam Soph. || 418 a, 2. τὸ T et E (Trend.) || 3. δ' om. E S, τὸ δὲ Soph. || 4. καθάπερ εἴρηται ante 6. ἔστιν transponenda censet Essen || 8. δυοῖν S U X || 11. pro πασῶν et 19. πάσαις Schieboldt, De imag. p. 15, coni. πλειόνων et πλείοσιν || 12. οἷον...14. διαφοράς in parenth. posui.

all, or else two modes of change should be assumed, one to the negative states and the other to the normal habits and the true nature.

In the sensitive subject the first change is due to the parent: once generated it possesses sensation exactly in the same sense as we possess knowledge. And to have actual sensation corresponds to exercise of knowledge. There is this difference, however, that in the one case the causes of the activity are external: as, for instance, the objects of sight, hearing and the other senses. The reason is that actual sensation is always of particulars, while knowledge is of universals: and these universals are, in a manner, in the soul itself. Hence it is in our power to think whenever we please, but sensation is not in our power: for the presence of the sensible object is necessary. It is much the same with the sciences which deal with sensible objects; and for the same reason, namely, that sensibles are particulars and are external. 6

Actual sensation conditioned by the external sensible.

But we shall have a further opportunity of making this clear hereafter. For the present let us be content to have established that of the two meanings of potentiality, the one according to which a child might be called potentially a general, and the other according to which a man of full age might be so called, it is the latter which applies to the faculty of sense-perception. But as this distinction has no word to mark it, although the fact and the nature of the distinction have been established, we are compelled to use the terms to suffer or be acted upon and to be qualitatively changed as if they were the proper terms. Now, as has been explained, the sensitive faculty is potentially such as the sensible object is in actuality. While it is being acted upon, it is not yet similar, but, when once it has been acted upon, it is assimilated and has the same character as the sensible object. 7

Assimilation of faculty to object in actual sensation.

6

In considering each separate sense we must first treat of their objects. By the sensible object may be meant any one of three things, two of which we say are perceived in themselves or directly, while the third is perceived *per accidens* or indirectly. Of the first two the one is the special object of a particular sense, the other an object common to all the senses. By a special object of a particular sense I mean that which cannot be perceived by any other sense and in respect to which deception is impossible; for 2

The sensible object: attributes perceived directly (1) by the several senses;

ὄψις χρώματος καὶ ἀκοὴ ψόφου καὶ γεῦσις χυμοῦ, ἡ δ' ἁφὴ πλείους μὲν ἔχει διαφοράς), ἀλλ' ἑκάστη γε κρίνει περὶ τούτων, καὶ οὐκ ἀπατᾶται ὅτι χρῶμα οὐδ' ὅτι ψόφος, 15
3 ἀλλὰ τί τὸ κεχρωσμένον ἢ ποῦ, ἢ τί τὸ ψοφοῦν ἢ ποῦ. τὰ μὲν οὖν τοιαῦτα λέγεται ἴδια ἑκάστου, κοινὰ δὲ κίνησις, ἠρεμία, ἀριθμός, σχῆμα, μέγεθος· τὰ γὰρ τοιαῦτα οὐδεμιᾶς ἐστὶν ἴδια, ἀλλὰ κοινὰ πάσαις. καὶ γὰρ ἁφῇ κίνησίς τίς
4 ἐστιν αἰσθητὴ καὶ ὄψει. κατὰ συμβεβηκὸς δὲ λέγεται αἰ- 20 σθητόν, οἷον εἰ τὸ λευκὸν εἴη Διάρους υἱός· κατὰ συμβεβηκὸς γὰρ τούτου αἰσθάνεται, ὅτι τῷ λευκῷ συμβέβηκε τοῦτο οὗ αἰσθάνεται. διὸ καὶ οὐδὲν πάσχει ᾗ τοιοῦτον ὑπὸ τοῦ αἰσθητοῦ. τῶν δὲ καθ' αὑτὰ αἰσθητῶν τὰ ἴδια κυρίως ἐστὶν αἰσθητά, καὶ πρὸς ἃ ἡ οὐσία πέφυκεν ἑκάστης αἰσθήσεως. 25

7 Οὗ μὲν οὖν ἐστὶν ἡ ὄψις, τοῦτ' ἐστὶν ὁρατόν. ὁρατὸν δ' ἐστὶ χρῶμα μέν, καὶ ὃ λόγῳ μὲν ἔστιν εἰπεῖν, ἀνώνυμον δὲ τυγχάνει ὄν· δῆλον δὲ ἔσται ὃ λέγομεν προελθοῦσι μάλιστα. τὸ γὰρ ὁρατόν ἐστι χρῶμα. τοῦτο δ' ἐστὶ τὸ ἐπὶ τοῦ καθ' αὑτὸ ὁρατοῦ· καθ' αὑτὸ δὲ οὐ τῷ λόγῳ, ἀλλ' ὅτι ἐν 30 ἑαυτῷ ἔχει τὸ αἴτιον τοῦ εἶναι ὁρατόν. πᾶν δὲ χρῶμα κινητικόν ἐστι τοῦ κατ' ἐνέργειαν διαφανοῦς, καὶ τοῦτ' ἔστιν αὐτοῦ ἡ 418b φύσις. διόπερ οὐχ ὁρατὸν ἄνευ φωτός, ἀλλὰ πᾶν τὸ ἑκάστου χρῶμα ἐν φωτὶ ὁρᾶται. διὸ περὶ φωτὸς πρῶτον λεκτέον τί
2 ἐστιν. ἔστι δή τι διαφανές. διαφανὲς δὲ λέγω ὃ ἔστι μὲν ὁρατόν, οὐ καθ' αὑτὸ δὲ ὁρατὸν ὡς ἁπλῶς εἰπεῖν, ἀλλὰ δι' 5 ἀλλότριον χρῶμα. τοιοῦτον δέ ἐστιν ἀὴρ καὶ ὕδωρ καὶ πολλὰ τῶν στερεῶν· οὐ γὰρ ᾗ ὕδωρ οὐδ' ᾗ ἀήρ, διαφανές, ἀλλ' ὅτι

13. post χυμοῦ vulg. punct. || 13. ἡ...14. διαφοράς in parenth. ponenda censet Susemihl || 14. post διαφοράς vulg. colon, post διαφοράς signum orationis imperfectae ponit Torst., cui adversatur Barco || ante ἑκάστη addendum ὡς censet Essen || ἕκαστον P || 17. ἑκάστης W Soph. 70, 33, de Them. 57, 36 non liquet, ἑκάστη X, vulgatam defendit Barco || 19. πάσαις om. U X et pr. S, πάντων rc. S, πασῶν videtur legisse Philop. 315, 10 || γὰρ ἡ ἁφῇ E (Bhl.) || 20. ὄψει] γεύσει coni. Steinhart || post ὄψει editi ante Bekkerum omnes, ut videtur: καθ' αὑτὰ μὲν οὖν ἐστὶν αἰσθητὰ ταῦτα, quae legit etiám Soph. || 21. διάρρους υἱὸς E T Soph. v. l. (Διάρους υἱὸς e codd. Hayduck 71, 4), διάρρου υἱὸς V, υἱὸς om. W, Διάρους υἱὸς Simpl., et Διάρους υἱὸς et Διάρης Them., Διάρης Philop., qui in nonnullis ἀντιγράφοις etiam scripturam esse Διάρους υἱὸς commemorat || 23. οὗ αἰσθάνεται ante 22. συμβέβηκε transponenda censet Essen || καὶ om. S U V || ᾗ om. S U X, tuentur et καὶ et ᾗ Them. Soph. || 26. ἡ om. S U || 27. μέν post χρῶμα E W Biehl Rodier, τε reliqui omnes, etiam Philop. Simpl. || 28. προελθοῦσι· μάλιστα γὰρ coni. Essen II, 42 || μάλιστα om. S U X, leg. Soph. || 29. τοῦτο...31. ὁρατόν unc. includenda censet Susemihl || 29, 30. τῶν καθ' αὑτὸ ὁρατῶν T W et E_1 (Bus.), τοῦ...ὁρατοῦ etiam Simpl. Philop. Soph. ||

example, sight is of colour, hearing of sound and taste of flavour, while touch no doubt has for its object several varieties. But at any rate each single sense judges of its proper objects and is not deceived as to the fact that there is a colour or a sound; though as to what or where the coloured object is or what or where the object is which produces the sound, mistake is possible. Such then, are the 3 special objects of the several senses. By common sensibles are meant motion, rest, number, figure, size: for such qualities are not the special objects of any single sense, but are common to all. For example, a particular motion can be perceived by touch as well as by sight. What is meant 4 by the indirect object of sense may be illustrated if we suppose that the white thing before you is Diares' son. You perceive Diares' son, but indirectly, for that which you perceive is accessory to the whiteness. Hence you are not affected by the indirect sensible as such. Of the two classes of sensibles directly perceived it is the objects special to the different senses which are properly perceptible: and it is to these that the essential character of each sense is naturally adapted.

or (2) by the senses in common.

The things which have the attributes are indirectly perceived.

The object, then, of sight is the visible: what is visible is colour 7 and something besides which can be described, though it has no name. What we mean will best be made clear as we proceed. The visible, then, is colour. Now colour is that with which what is visible in itself is overlaid: and, when I say in itself, I do not mean what is visible by its essence or form, but what is visible because it contains within itself the cause of visibility, namely, colour. But colour is universally capable of exciting change in the actually transparent, that is, in light; this being, in fact, the true nature of colour. Hence colour is not visible without light, but the colour of each object is always seen in light. And so we shall have first to explain what light is.

Sight and colour.

There is, then, we assume, something transparent; and by this 2 I mean that which, though visible, is not properly speaking, visible in itself, but by reason of extrinsic colour. Air, water and many solid bodies answer to this description. For they are not transparent *quâ* air or *quâ* water,

The medium.

31. αὐτῷ X, αὐτῷ U V, ἑαυτῷ videntur legisse Them. 58, 31 Philop. 320, 18 || post χρῶμα add. ἐν ἄλλῳ ἔχει et κινητικὸν...b, 1. διαφανοῦς unc. incl. Essen || 418 b, 2. πάντως ἕκαστον S U X Them. et fort. Simpl., πᾶν τὸ ἑκάστου etiam Soph. || 3. ὁρᾶται E T y Soph. Torst., reliqui ante Torst. omnes ὁρατὸν || 6. χρῶμα deleri vult Siebeck, Philolog. XL, p. 347, probat Susemihl, χρ. leg. etiam Theoph. ap. Prisc. 7, 28 || 7. post στερεῶν add. οἷον ὕελος κρύσταλλος T et margo U, similia in paraphr. Them. Philop. Soph.

ἐστὶ φύσις ὑπάρχουσα ἡ αὐτὴ ἐν τούτοις ἀμφοτέροις καὶ
ἐν τῷ ἀϊδίῳ τῷ ἄνω σώματι. φῶς δέ ἐστιν ἡ τούτου ἐνέργεια,
τοῦ διαφανοῦς ᾗ διαφανές. δυνάμει δὲ ἐν ᾧ τοῦτ᾽ ἐστὶ καὶ τὸ 10 15
σκότος. τὸ δὲ φῶς οἷον χρῶμά ἐστι τοῦ διαφανοῦς, ὅταν ᾖ
ἐντελεχείᾳ διαφανὲς ὑπὸ πυρὸς ἢ τοιούτου οἷον τὸ ἄνω
σῶμα· καὶ γὰρ τούτῳ τι ὑπάρχει ἓν καὶ ταὐτόν. τί μὲν οὖν
τὸ διαφανὲς καὶ τί τὸ φῶς, εἴρηται, ὅτι οὔτε πῦρ οὔθ᾽ ὅλως
σῶμα οὐδ᾽ ἀπορροὴ σώματος οὐδενός (εἴη γὰρ ἂν σῶμά τι καὶ 15 0
οὕτως), ἀλλὰ πυρὸς ἢ τοιούτου τινὸς παρουσία ἐν τῷ διαφα-
νεῖ· οὐδὲ γὰρ δύο σώματα ἅμα δυνατὸν ἐν τῷ αὐτῷ εἶναι·
3 δοκεῖ τε τὸ φῶς ἐναντίον εἶναι τῷ σκότει· ἔστι δὲ τὸ σκότος
στέρησις τῆς τοιαύτης ἕξεως ἐκ διαφανοῦς, ὥστε δῆλον ὅτι
καὶ ἡ τούτου παρουσία τὸ φῶς ἐστίν. καὶ οὐκ ὀρθῶς Ἐμπε- 20
δοκλῆς, οὐδ᾽ εἴ τις ἄλλος οὕτως εἴρηκεν, ὡς φερομένου τοῦ
φωτὸς καὶ γιγνομένου ποτὲ μεταξὺ τῆς γῆς καὶ τοῦ περι-
έχοντος, ἡμᾶς δὲ λανθάνοντος· τοῦτο γάρ ἐστι καὶ παρὰ
τὴν τοῦ λόγου ἐνάργειαν καὶ παρὰ τὰ φαινόμενα· ἐν μι-
κρῷ μὲν γὰρ διαστήματι λάθοι ἄν, ἀπ᾽ ἀνατολῆς δ᾽ ἐπὶ 25
4 δυσμὰς τὸ λανθάνειν μέγα λίαν τὸ αἴτημα. ἔστι δὲ χρώ-
ματος μὲν δεκτικὸν τὸ ἄχρουν, ψόφου δὲ τὸ ἄψοφον. 8b
ἄχρουν δ᾽ ἐστὶ τὸ διαφανὲς καὶ τὸ ἀόρατον ἢ τὸ μόλις
ὁρώμενον, οἷον δοκεῖ τὸ σκοτεινόν. τοιοῦτον δὲ τὸ διαφανὲς
μέν, ἀλλ᾽ οὐχ ὅταν ᾖ ἐντελεχείᾳ διαφανές, ἀλλ᾽ ὅταν δυ- 30
νάμει· ἡ γὰρ αὐτὴ φύσις ὁτὲ μὲν σκότος ὁτὲ δὲ φῶς
ἐστίν. οὐ πάντα δὲ ὁρατὰ ἐν φωτί ἐστιν, ἀλλὰ μόνον ἑκάστου 419a
τὸ οἰκεῖον χρῶμα· ἔνια γὰρ ἐν μὲν τῷ φωτὶ οὐχ ὁρᾶται,
ἐν δὲ τῷ σκότει ποιεῖ αἴσθησιν, οἷον τὰ πυρώδη φαινόμενα
καὶ λάμποντα (ἀνώνυμα δ᾽ ἐστὶ ταῦτα ἑνὶ ὀνόματι), οἷον

8. *ἐστί τις φύσις* U X Them. Simpl. Soph. Torst., om. *τις* reliqui ‖ *ἐνυπάρχουσα* S U V X Them. Bek. Trend. ‖ *καὶ...9. σώματι* unc. includenda censet Susemihl ‖ 9. virgulam post *ἐνέργ.* om. Bek. Trend., *ἐνέργεια καὶ τοῦ διαφανοῦς* coni. Trend. ‖ 10. virgulam post *ἐστὶ* Bek., post *δὲ* Torst., *δυνάμει δὲ καὶ ἐν ᾧ τοῦτ᾽ ἐστί, τὸ σκότος* coni. Steinhart ‖ 11. *ᾗ* om. E ‖ 12. *ἢ...13. ταὐτόν* unc. includenda censent Susemihl et Essen II, 43 ‖ 14. *εἴρηται καὶ τί τὸ φῶς* V, similiter in paraphr. Them. ‖ 15. post *σῶμα* transferenda esse, quae nunc 17. leguntur, ita: *σῶμα (οὐδὲ γὰρ...εἶναι), οὐδ᾽ ἀπορροὴ* censet Torst., eundem, quem vulgata, ordinem servant Them. Simpl. Philop. ‖ *οὔτε* T V W, *οὐδὲ* etiam Them. ‖ 16. *ἢ τοιούτου τινὸς* unc. includenda censet Susemihl ‖ 18. *τε*] *δὲ* T U V X Bek. Trend. ‖ *σκότω* E S ‖ *ὁ* T U, om. V ‖ 20. *τὸ φῶς ἡ τούτου παρουσία* S U X, vulgatam tuetur Them. ‖ 22. *τεινομένου* E V et vet. transl. Stapfer, Krit. Stud. p. 16 Biehl Rodier, vulgo *γιγνομένου*, etiam Them. 60, 28 Diels, Fragmente der Vorsokr. p. 170, 38 ‖ *ποτὲ*] *πρότερον εἰς τὸ*

but because there is a certain natural attribute present in both of them which is present also in the eternal body on high. Light is the actuality of this transparent *quâ* transparent. But where the transparent is only potentially present, there darkness is actually. Light is a sort of colour in the transparent when made transparent in actuality by the agency of fire or something resembling the celestial body: for this body also has an attribute which is one and the same with that of fire. What the transparent is, and what light is, has now been stated; namely, that it is neither fire nor body generally nor an effluence from any body (for even then it would still be a sort of body), but the presence of fire or something fiery in the transparent. For it is impossible for two bodies to occupy the same space at the same time.

Light not corporeal.

3 Light is held to be contrary to darkness. But darkness is absence from the transparent of the quality above described: so that plainly light is the presence of it. Thus Empedocles and others who propounded the same view are wrong when they represent light as moving in space and arriving at a given point of time between the earth and that which surrounds it without our perceiving its motion. For this contradicts not only the clear evidence of reason, but also the facts of observation: since, though a movement of light might elude observation within a short distance, that it should do so all the way from east to west is too much to assume.

The velocity of light incredible.

4 It is that which is colourless which is receptive of colour, as it is that which is soundless which is receptive of sound. And the transparent is colourless, and so is the invisible or the dimly visible which is our idea of the dark. Such is the transparent medium, not indeed when it is in actuality, but when potentially transparent. For it is the same natural attribute which is at one time darkness and at another time light. It is not everything visible which is visible in light, but only the proper colour of each thing. Some things, indeed, are not seen in daylight, though they produce sensation in the dark: as, for example, the things of fiery and glittering appearance, for which there is no one distinguishing name, like fungus, horn,

Phosphorescent objects.

coni. Essen, coll. De Sensu 6, 446 b, 29, 30 || τῆς γῆς...23. περιέχοντος unc. incl. Essen || 24. τὴν ἐν τῷ λόγῳ S U X Them. Bek. Trend. τὴν τοῦ λόγου etiam Soph. || ἐνάργειαν T W y Soph. 75, 27 Torst., ἐνέργειαν E (Trend.), ἀλήθειαν reliqui ante Torst. omnes, etiam Them. || ἐν μικρῷ...26. αἴτημα unc. incl. Essen || 419 a, 3. σκότωι E, σκότῳ Them., σκότει Soph.

μύκης, κέρας, κεφαλαὶ ἰχθύων καὶ λεπίδες καὶ ὀφθαλ- 5
μοί· ἀλλ' οὐδενὸς ὁρᾶται τούτων τὸ οἰκεῖον χρῶμα. δι' ἣν
5 μὲν οὖν αἰτίαν ταῦτα ὁρᾶται, ἄλλος λόγος· νῦν δ' ἐπὶ το-
σοῦτον φανερόν ἐστιν, ὅτι τὸ μὲν ἐν φωτὶ ὁρώμενον χρῶμα.
διὸ καὶ οὐχ ὁρᾶται ἄνευ φωτός· τοῦτο γὰρ ἦν αὐτῷ τὸ
χρώματι εἶναι, τὸ κινητικῷ εἶναι τοῦ κατ' ἐνέργειαν διαφα- 10
νοῦς· ἡ δ' ἐντελέχεια τοῦ διαφανοῦς φῶς ἐστίν. σημεῖον δὲ τού-
του φανερόν· ἐὰν γάρ τις θῇ τὸ ἔχον χρῶμα ἐπ' αὐτὴν
τὴν ὄψιν, οὐκ ὄψεται· ἀλλὰ τὸ μὲν χρῶμα κινεῖ τὸ δια-
φανές, οἷον τὸν ἀέρα, ὑπὸ τούτου δὲ συνεχοῦς ὄντος κινεῖται
6 τὸ αἰσθητήριον. οὐ γὰρ καλῶς τοῦτο λέγει Δημόκριτος οἰό- 15
μενος, εἰ γένοιτο κενὸν τὸ μεταξύ, ὁρᾶσθαι ἂν ἀκριβῶς, καὶ
εἰ μύρμηξ ἐν τῷ οὐρανῷ εἴη· τοῦτο γὰρ ἀδύνατόν ἐστιν. πά-
σχοντος γάρ τι τοῦ αἰσθητικοῦ γίνεται τὸ ὁρᾶν· ὑπ' αὐτοῦ
μὲν οὖν τοῦ ὁρωμένου χρώματος ἀδύνατον· λείπεται δὴ ὑπὸ
τοῦ μεταξύ, ὥστ' ἀναγκαῖόν τι εἶναι μεταξύ· κενοῦ δὲ γενο- 20
μένου οὐχ ὅτι ἀκριβῶς, ἀλλ' ὅλως οὐθὲν ὀφθήσεται.

7 δι' ἣν μὲν οὖν αἰτίαν τὸ χρῶμα ἀναγκαῖον ἐν φωτὶ ὁρᾶσθαι,
εἴρηται. πῦρ δὲ ἐν ἀμφοῖν ὁρᾶται, καὶ ἐν σκότει καὶ ἐν φωτί,
καὶ τοῦτο ἐξ ἀνάγκης· τὸ γὰρ διαφανὲς ὑπὸ τούτου γίνεται
8 διαφανές. ὁ δ' αὐτὸς λόγος καὶ περὶ ψόφου καὶ ὀσμῆς 25
ἐστίν· οὐθὲν γὰρ αὐτῶν ἁπτόμενον τοῦ αἰσθητηρίου ποιεῖ τὴν
αἴσθησιν, ἀλλ' ὑπὸ μὲν ὀσμῆς καὶ ψόφου τὸ μεταξὺ κι-
νεῖται, ὑπὸ δὲ τούτου τῶν αἰσθητηρίων ἑκάτερον· ὅταν δ' ἐπ'
αὐτό τις ἐπιθῇ τὸ αἰσθητήριον τὸ ψοφοῦν ἢ τὸ ὄζον, οὐδεμίαν
αἴσθησιν ποιήσει. περὶ δὲ ἁφῆς καὶ γεύσεως ἔχει μὲν 30
ὁμοίως, οὐ φαίνεται δέ· δι' ἣν δ' αἰτίαν, ὕστερον ἔσται δῆλον.
9 τὸ δὲ μεταξὺ ψόφων μὲν ἀήρ, ὀσμῆς δ' ἀνώνυμον· κοινὸν
γὰρ δή τι πάθος ἐπ' ἀέρος καὶ ὕδατός ἐστιν, ὥσπερ τὸ δια-
φανὲς χρώματι, οὕτω τῷ ἔχοντι ὀσμὴν ὃ ἐν ἀμφοτέροις

5. *κέρας*] *κρέας* coni. Chandler, Sugg. and emend., p. 7 || *λοπίδες* E_1, *λεπίδες* etiam Them. Philop. Soph. || 7. *ὁρατά* E, *ὁρᾶται* etiam Them. Philop. Soph. || 9. *καὶ* om. E U W Soph. || *αὐτὸ* W Trend., *αὐτῷ* etiam Them. Soph., tuentur Prantl, Arist. üb. d. Farben, p. 93, adn. 2, Barco p. 57, *αὐτὸ ἦν* pro *ἦν αὐτῷ* coni. Essen II, p. 45 || *τὸ*] *τῷ* W, om. S Them. || 10. post *χρ. εἶναι* virgulam om. Bek. Trend. || 14. *δὴ* E T W y, *δὲ ἤδη* Them., *δὲ* etiam Simpl. Soph. || 16. virg. post *ἀκριβῶς* posuit Diels || 16. et 17. *καὶ εἰ*] *καὶ εἰ* etiam Soph. 83, 32, *κἂν εἰ* Philop. 350, 8 || 17. *ἐστιν ἀδύνατον* S U X, *ἀδύνατόν ἐστιν* Soph. || 18. *αἰσθητηρίου* V W et, ut videtur, Philop. 350, 13, *αἰσθητικοῦ* etiam Soph., *αἰσθήσεως* in paraphr. Them. 62, 14 || 19. *δὴ* E T W, *δὲ* reliqui ante Biehlium

the heads, scales and eyes of fishes. But in no one of these cases is the proper colour seen. Why these objects are seen must be discussed elsewhere. At present this much is clear, that the **5** object seen in light is colour, and this is why it is not seen without light. For the very quiddity of colour is, as we saw, just this, that it is capable of exciting change in the operantly transparent medium: and the activity of the transparent is light. There is clear evidence of this. If you lay the coloured object upon your eye, you will not see it. On the contrary, what the colour excites is the transparent medium, say, the air, and by this, which is continuous, the sense-organ is stimulated. For it was a mistake in Democritus **6** to suppose that if the intervening space became a void, even an ant would be distinctly seen, supposing there were one in the sky. That is impossible. For sight takes place through an affection of the sensitive faculty. Now it cannot be affected by that which is seen, the colour itself: therefore it can only be by the intervening medium: hence the existence of some medium is necessary. But, if the intermediate space became a void, so far from being seen distinctly, an object would not be visible at all.

Necessity of a medium.

We have explained the reason why colour must be seen in **7** light. Fire is visible both in light and in darkness: and necessarily so, for it is owing to fire that the transparent becomes transparent. The same argument holds for sound and odour. For no sound **8** or scent produces sensation by contact with the sense-organ: it is the intervening medium which is excited by sound and odour and the respective sense-organs by the medium. But, when the body which emits the sound or odour is placed on the sense-organ itself, it will not produce any sensation. The same holds of touch and taste, although it appears to be otherwise. The reason for this will be seen hereafter. The medium for sounds is air, that for odour **9** has no name. For there is assuredly a common quality in air and water, and this quality, which is present in both, stands to the body which emits odour in the same relation as the transparent

omnes, etiam Them. Simpl. Soph. || 20. ὥστ'...μεταξύ om. S U X, leg. Soph. (cf. Prisc. L. 10, 10) || 22. δι' ἣν...25. διαφανές unc. incl. Susemihl et Essen || 23. σκότωι E, σκότῳ Soph. || 29. τις ἐπιθῇ om. pr. E || τὸ ante αἰσθ. om. E || 32. codd. hoc loco non variant, vulgatam leg. etiam Philop. Simpl. et, ut videtur, Soph. 84, 11, sed Them. interpretatur: τὸ δὲ μεταξὺ ψόφου καὶ ὀσμῆς ἀὴρ καὶ ὕδωρ, unde Brandisius coni. Them. legisse τὸ δὲ μεταξὺ ψόφων καὶ ὀσμῆς ἀνώνυμον, Torst. coni. ab Arist. haec fere scripta fuisse: τὸ δὲ μεταξὺ ψόφου μὲν καὶ ὀσμῆς ἀήρ τε καὶ ὕδωρ· τὸ δὲ κοινὸν ἀνώνυμον· κοινὸν..., vulgatam defendit Barco, p. 58, τὸ δὲ μεταξὺ...b, 3. λεχθήσεται unc. incl. Essen || 33. δή om. S U V W X y || 34. χρώματος P || post ὀσμὴν virgulam posuit Rodier || ὃ ἐν] ὃν S X, ὂν ἐν P, ἐν T V.

ὑπάρχει τούτοις· φαίνεται γὰρ καὶ τὰ ἔνυδρα τῶν ζῴων 35
ἔχειν αἴσθησιν ὀσμῆς. ἀλλ' ὁ μὲν ἄνθρωπος καὶ τῶν πεζῶν **419b**
ὅσα ἀναπνεῖ, ἀδυνατεῖ ὀσμᾶσθαι μὴ ἀναπνέοντα. ἡ δ' αἰ-
τία καὶ περὶ τούτων ὕστερον λεχθήσεται.

8 Νῦν δὲ πρῶτον περὶ ψόφου καὶ ἀκοῆς διορίσωμεν. ἔστι
δὲ διττὸς ὁ ψόφος· ὁ μὲν γὰρ ἐνεργείᾳ τις, ὁ δὲ δυνάμει· 5
τὰ μὲν γὰρ οὔ φαμεν ἔχειν ψόφον, οἷον σπόγγον, ἔρια, τὰ
δ' ἔχειν, οἷον χαλκὸν καὶ ὅσα στερεὰ καὶ λεῖα, ὅτι δύνα-
ται ψοφῆσαι. τοῦτο δ' ἐστὶν αὐτοῦ μεταξὺ καὶ τῆς ἀκοῆς
2 ἐμποιῆσαι ψόφον ἐνεργείᾳ. γίνεται δ' ὁ κατ' ἐνέργειαν ψό-
φος ἀεί τινος πρός τι καὶ ἔν τινι· πληγὴ γάρ ἐστιν ἡ ποι- 10
οῦσα. διὸ καὶ ἀδύνατον ἑνὸς ὄντος γενέσθαι ψόφον· ἕτερον
γὰρ τὸ τύπτον καὶ τὸ τυπτόμενον· ὥστε τὸ ψοφοῦν πρός τι
ψοφεῖ· πληγὴ δ' οὐ γίνεται ἄνευ φορᾶς. ὥσπερ δ' εἴπομεν,
οὐ τῶν τυχόντων πληγὴ ὁ ψόφος· οὐθένα γὰρ ποιεῖ ψόφον
ἔρια ἂν πληγῇ, ἀλλὰ χαλκὸς καὶ ὅσα λεῖα καὶ κοῖλα, 15
ὁ μὲν χαλκός, ὅτι λεῖος· τὰ δὲ κοῖλα τῇ ἀνακλάσει πολ-
λὰς ποιεῖ πληγὰς μετὰ τὴν πρώτην, ἀδυνατοῦντος ἐξελθεῖν
τοῦ κινηθέντος. ἔτι ἀκούεται ἐν ἀέρι καὶ ὕδατι, ἀλλ' ἧττον·
3 οὐκ ἔστι δὲ ψόφου κύριος ὁ ἀὴρ οὐδὲ τὸ ὕδωρ· ἀλλὰ δεῖ
στερεῶν πληγὴν γενέσθαι πρὸς ἄλληλα καὶ πρὸς τὸν ἀέρα. 20
τοῦτο δὲ γίνεται, ὅταν ὑπομένῃ πληγεὶς ὁ ἀὴρ καὶ μὴ δια-
χυθῇ. διὸ ἐὰν ταχέως καὶ σφοδρῶς πληγῇ, ψοφεῖ· δεῖ γὰρ
φθάσαι τὴν κίνησιν τοῦ ῥαπίζοντος τὴν θρύψιν τοῦ ἀέρος,
ὥσπερ ἂν εἰ σωρὸν ἢ ὁρμαθὸν ψάμμου τύπτοι τις φερόμε-
4 νον ταχύ. ἠχὼ δὲ γίνεται, ὅταν ἀπὸ τοῦ ἀέρος ἑνὸς γενομέ- 25
νου διὰ τὸ ἀγγεῖον τὸ διορίσαν καὶ κωλῦσαν θρυφθῆναι

419 b, 1. *ὀδμῆς* et 2. *ὀδμᾶσθαι* E T || *ἀλλ'*...4. *διορίσωμεν*] ex Themistii et Sophoniae interpretationibus Torst. coni. Arist. haec fere scripsisse: *ἀλλ' ὁ μὲν ἄνθρωπος καὶ τῶν πεζῶν ὅσα ἀναπνεῖ ἀδυνατεῖ ὀσμᾶσθαι μὴ ἀναπνέοντα, τὰ δὲ ἔνυδρα ὀσμᾶται καὶ μὴ ἀναπνέοντα. ἡ δ' αἰτία καὶ περὶ τούτων ὕστερον λεχθήσεται. νῦν δ' ἐκ τῶν εἰρημένων δῆλον τί ἐστιν ὄψις. μετὰ δὲ ταῦτα λεκτέον περὶ ἀκοῆς καὶ ὀσφρήσεως· καὶ πρῶτον μὲν περὶ ψόφου καὶ ἀκοῆς διορίσωμεν,* Simplicium vulgatam legisse et ex interpret. huius loci et quae p. 138 de Alexandro dicit certum est, vulgatam defendit Wilson, Trans. of Ox. Philol. Soc. 1882/3, p. 6 || 4. *ἀκοῆς*] *ὀσφρήσεως* E W X y et Soph., reliqui *ἀκοῆς*, etiam Them. || 5. *ἐνεργείαι* (i.e. casu dativo) E (Trend.) et *δυνάμει* E Them. Simpl. Philop. Soph. Torst., *ἐνέργεια* et *δύναμις* reliqui ante Torst. omnes || *τις* post *ἐνεργείᾳ* om. Soph., leg. Them. Simpl. || 7. *χαλκὸς* T, *χαλκὸν* etiam Them. Soph. || 8. *τοῦτο δ' ἐστὶν*...9. *ἐνεργείᾳ* unc. incl. Essen || 10. post *τινι* addendum *πλήττοντος* censet Chandler || 11. *γίνεσθαι* X Soph., probat Susemihl || *τὸν ψόφον* E, *τὸν* om. Soph. || 15. *ἔριον ἢ πατάξαν ἢ πληγέν, ἀλλὰ* V X et margo U,

to colour. For the animals that live in water also appear to have the sense of smell. But man and the other land-animals which breathe are unable to smell without inhaling breath. The reason for this, too, must be reserved for future explanation.

Let us now begin by determining the nature of sound and **8** hearing. There are two sorts of sound, one a sound which is operant, the other potential sound. For some things we say have no sound, as sponge, wool; others, for example, bronze and all things solid and smooth, we say have sound, because they can emit sound, that is, they can produce actual sound between the sonorous body and the organ of hearing. When **2** actual sound occurs it is always of something on something and in something, for it is a blow which produces it. Hence it is impossible that a sound should be produced by a single thing, for, as that which strikes is distinct from that which is struck, that which sounds sounds upon something. And a blow implies spatial motion. As we stated above, it is not concussion of any two things taken at random which constitutes sound. Wool, when struck, emits no sound at all, but bronze does, and so do all smooth and hollow things; bronze emits sound because it is smooth, while hollow things by reverberation produce a series of concussions after the first, that which is set in motion being unable to escape.

Sound and hearing.

Further, sound is heard in air and, though more faintly, in water. It is not the air or the water, however, which **3** chiefly determine the production of sound: on the contrary, there must be solid bodies colliding with one another and with the air: and this happens when the air after being struck resists the impact and is not dispersed. Hence the air must be struck quickly and forcibly if it is to give forth sound; for the movement of the striker must be too rapid to allow the air time to disperse: just as would be necessary if one aimed a blow at a heap of sand or a sandwhirl, while it was in rapid motion onwards.

The medium.

Echo is produced when the air is made to rebound backwards **4** like a ball from some other air which has become a single mass owing to its being within a cavity which confines

Echo.

vulgatam leg. sine dubio Philop. 359, 23 et fort. Soph. 84, 33 ἐν (v. l. εἰ) πληγῇ ‖ 18. ἐν] μὲν ἐν coni. Torst. ‖ ἀλλ' ἧττον unc. incl. Torst., om. Soph., videntur legisse Them. 63, 20 Simpl. 140, 15 Philop. 359, 28 ‖ 19. οὔτε T W, οὔτε δὲ E, οὐδὲ etiam Simpl. Soph. ‖ 20. καί] Torst. coni. ᾗ καί, quod iam Steinhart coniecerat, vulgatam tuentur Philop. Simpl. Soph. ‖ 21. ὑπομείνῃ E et fort. Simpl. 140, 27. 141, 6, ὑπομένῃ Soph. ‖ 24. ὥσπερ ἂν...25. ταχύ unc. incl. Susemihl ‖ 24. ἂν om. S T U X, leg. Soph. ‖ σωρὸν ἢ delendum censet Essen ‖ τις] τι coni. Essen ‖ 25. τάχει P ‖ ἀπὸ τοῦ om. S U V X Torst., leg. Soph. et Alex. de anima 48, 1 (sed ὑπὸ pro ἀπὸ) ‖ γινομένου U V W X Soph.

πάλιν ὁ ἀὴρ ἀπωσθῇ, ὥσπερ σφαῖρα. ἔοικε δ' ἀεὶ γίνεσθαι
ἠχώ, ἀλλ' οὐ σαφής, ἐπεὶ συμβαίνει γε ἐπὶ τοῦ ψόφου
καθάπερ καὶ ἐπὶ τοῦ φωτός· καὶ γὰρ τὸ φῶς ἀεὶ ἀνακλᾶ-
ται (οὐδὲ γὰρ ἂν ἐγίνετο πάντῃ φῶς, ἀλλὰ σκότος ἔξω τοῦ 30
ἡλιουμένου), ἀλλ' οὐχ οὕτως ἀνακλᾶται ὥσπερ ἀφ' ὕδατος
ἢ χαλκοῦ ἢ καί τινος ἄλλου τῶν λείων, ὥστε σκιὰν ποιεῖν,
5 ᾗ τὸ φῶς ὁρίζομεν. τὸ δὲ κενὸν ὀρθῶς λέγεται κύριον τοῦ
ἀκούειν. δοκεῖ γὰρ εἶναι κενὸν ὁ ἀήρ, οὗτος δ' ἐστὶν ὁ ποιῶν
ἀκούειν, ὅταν κινηθῇ συνεχὴς καὶ εἷς. ἀλλὰ διὰ τὸ ψαθυρὸς 35
εἶναι οὐ γεγωνεῖ, ἂν μὴ λεῖον ᾖ τὸ πληγέν. τότε δὲ εἷς γί- 420a
νεται ἅμα διὰ τὸ ἐπίπεδον· ἓν γὰρ τὸ τοῦ λείου ἐπίπεδον.

6 ψοφητικὸν μὲν οὖν τὸ κινητικὸν ἑνὸς ἀέρος συνεχείᾳ μέχρις
ἀκοῆς. ἀκοῇ δὲ συμφυὴς ἀήρ· διὰ δὲ τὸ ἐν ἀέρι εἶναι, κινουμέ-
νου τοῦ ἔξω ὁ εἴσω κινεῖται. διόπερ οὐ πάντῃ τὸ ζῷον ἀκούει, 5
οὐδὲ πάντῃ διέρχεται ὁ ἀήρ· οὐ γὰρ πάντῃ ἔχει ἀέρα τὸ κι-
νησόμενον μέρος καὶ ἔμψυχον. αὐτὸς μὲν δὴ ἄψοφον ὁ ἀὴρ
διὰ τὸ εὔθρυπτον· ὅταν δὲ κωλυθῇ θρύπτεσθαι, ἡ τούτου
κίνησις ψόφος. ὁ δ' ἐν τοῖς ὠσὶν ἐγκατῳκοδόμηται πρὸς τὸ
ἀκίνητος εἶναι, ὅπως ἀκριβῶς αἰσθάνηται πάσας τὰς δια- 10
φορὰς τῆς κινήσεως. διὰ ταῦτα δὲ καὶ ἐν ὕδατι ἀκούο-
μεν, ὅτι οὐκ εἰσέρχεται πρὸς αὐτὸν τὸν συμφυῆ ἀέρα· ἀλλ'
οὐδ' εἰς τὸ οὖς διὰ τὰς ἕλικας. ὅταν δὲ τοῦτο συμβῇ, οὐκ
ἀκούει· οὐδ' ἂν ἡ μῆνιγξ κάμῃ, ὥσπερ τὸ ἐπὶ τῇ κόρῃ δέρ-
μα [ὅταν κάμῃ]. ἀλλὰ καὶ σημεῖον τοῦ ἀκούειν ἢ μὴ τὸ 15

30. οὐ S T U V X Them., οὐδὲ etiam Soph. || 33. ᾗ] ᾧ scripsit Torst. e solo Philop., ᾗ etiam Soph. || 33. τὸ δὲ...35. εἷς partim corrupta partim alieno loco posita esse putat Torst., vide eius comment. crit. p. 148, tuentur Them. Philop. Simpl. Soph. || 420 a, 1. Torst. suspicatur Arist. scripsisse τότε δὲ εἷς γίνεται καὶ ἅμα ἀφάλλεται, διὰ τὸ ἐπίπεδον, similiter in interpret. Them. et Philop., vulgatam leg. etiam Soph. || 2. ἅμα γὰρ διὰ U, ὅλος γὰρ ἅμα κινεῖται Philop. in paraphr. 363, 27 || 4. ἀκοῇ δὲ συμφυὴς ἀήρ W P y Simpl. Philop. Prisc. Lyd. 16, 22 Soph. Torst. Kampe, Erkenntnissth. d. Ar., p. 75 Bon., Ind. Ar. 720 a, 11 Rodier, ceteri libri et scripti et impressi ἀκοὴ δὲ συμφυὴς ἀέρι, etiam Them. 64, 16 sq., sed 64, 17. 28 τῇ μήνιγγι συμφυὴς || διὰ τὸ ἕνα ἀέρα εἶναι coni. Steinhart, quod iam Iul. Pacius coniecerat, fort. recte, probat Beare, διά τε τὸ, virgula ante διὰ posita, coni. dubitanter Susemihl, textum tuentur Simpl. Philop. || 5. τὸ S U V X Bek. Trend., ὁ leg. etiam Them. Philop. Torst. || ἔσω S U || κινεῖ S T V W Bek. Trend., κινεῖται etiam Philop. Simpl. vet. transl. Torst., cui assentitur etiam Hayduck, progr. Gryph. 1873, p. 2 || πάντα τὸ ζῷον ἀκούει, ἀλλ' ὠσίν, οὐδὲ πάντα διέρχεται ὁ ἀήρ P, παντὶ μέρει τὸ ζῷον ἀκούει ἀλλ' ὠσίν· οὐδὲ πανταχοῦ τοῦ σώματος διέρχεται· οὐ γὰρ W y, similia habent et Them. et Philop., fluxisse e priori editione putat Torst., sed nihil nisi interpretamentum est, vulgatam [illegible] Soph. Simpl. || 6. ὁ ἀὴρ unc. incl. Torst., leg. Soph. || ἀέρα, ἀλλὰ τὸ κ. coni.

it and prevents its dispersion. It seems likely that echo is always produced, but is not always distinctly audible: since surely the same thing happens with sound as with light. For light is always being reflected; else light would not be everywhere, but outside the spot where the sun's rays fall there would be darkness. But it is not always reflected in the same way as it is from water or bronze or any other smooth surface; I mean, it does not always produce the shadow, by which we define light.

Conditions of resonance and hearing.

Void is rightly stated to be the indispensable condition of hearing. For the air is commonly believed to be a void, and it is the air which causes hearing, when being one and continuous it is set in motion. But, owing to its tendency to disperse, it gives out no sound unless that which is struck is smooth. In that case the air when struck is simultaneously reunited because of the unity of the surface; for a smooth body presents a single surface. 5

That, then, is resonant which is capable of exciting motion in a mass of air continuously one as far as the ear. There is air naturally attached to the ear. And because the ear is in air, when the external air is set in motion, the air within the ear moves. Hence it is not at every point that the animal hears, nor that the air passes through: for it is not at every point that the part which is to set itself in motion and to be animate has a supply of air. Of itself, then, the air is a soundless thing because it is easily broken up. But, whenever it is prevented from breaking up, its movement is sound. But the air within the ears has been lodged fast within walls to make it immoveable, in order that it may perceive exactly all the varieties of auditory movement. This is why we hear in water also, because the water does not pass right up to the air attached to the ear, nor even into the ear at all, because of its convolutions. Should this happen, hearing is destroyed, as it is by an injury to the membrane of the tympanum, and as sight is by an injury to the cornea. Further, we have evidence whether we hear or not, according as there is or is not always a ringing sound in 6

Torst., ἀλλὰ non leg. Philop. Soph. || 7. ἔμψυχον etiam Philop. Soph., ἔμψοφον coni. Torst., cui assentiuntur Hayduck et Dittenberger, p. 1615, ἔμψυχον, ὥσπερ ἡ κόρη τὸ ὑγρόν· αὐτὸ W P y et margo U vet. transl. et, ut videtur, Philop. 366, 9. 10. 11, non leg. Soph., καὶ γὰρ πρὸς ἔμψυχον αὐτὸς, puncto post μέρος posito, legendum censet Essen || αὐτὸς e Them. scripsit Torst., cui assentiuntur Biehl et Rodier, ceteri αὐτὸ || 7. αὐτὸς μὲν δὴ...9. ψόφος ante 419 b, 33. τὸ δὲ transponenda coni. Steinhart, Susemihl vero, mutato δὴ in γὰρ, fort. ante 419 b, 25. ἠχώ || 10. ἀμετακίνητος coni. Hayduck || 12. τὸν συμφυῆ... 13. ἕλικας unc. incl. Torst., leg. Simpl. Philop. Soph. || 14. οὔτ' E T || 15. ὅταν κάμῃ unc. inclusit Biehl, om. E T W P y Soph. || ἀλλὰ usque ad 18. ἴδιος unc. incl. Torst., tuentur Them. Simpl. Philop. Soph.

ἠχεῖν αἰεὶ τὸ οὖς ὥσπερ τὸ κέρας· ἀεὶ γὰρ οἰκείαν τινὰ κί-
νησιν ὁ ἀὴρ κινεῖται ὁ ἐν τοῖς ὠσίν· ἀλλ' ὁ ψόφος ἀλλό-
τριος καὶ οὐκ ἴδιος. καὶ διὰ τοῦτό φασιν ἀκούειν τῷ κενῷ καὶ
7 ἠχοῦντι, ὅτι ἀκούομεν τῷ ἔχοντι ὡρισμένον τὸν ἀέρα. πότερον
δὲ ψοφεῖ τὸ τυπτόμενον ἢ τὸ τύπτον; ἢ καὶ ἄμφω, τρό- 20
πον δ' ἕτερον· ἔστι γὰρ ὁ ψόφος κίνησις τοῦ δυναμένου κι-
νεῖσθαι τὸν τρόπον τοῦτον ὅνπερ τὰ ἀφαλλόμενα ἀπὸ τῶν
λείων, ὅταν τις κρούσῃ. οὐ δὴ πᾶν, ὥσπερ εἴρηται, ψοφεῖ
τυπτόμενον καὶ τύπτον, οἷον ἐὰν πατάξῃ βελόνη βελόνην·
ἀλλὰ δεῖ τὸ τυπτόμενον ὁμαλὸν εἶναι, ὥστε τὸν ἀέρα ἀθροῦν 25
8 ἀφάλλεσθαι καὶ σείεσθαι. αἱ δὲ διαφοραὶ τῶν ψοφούντων
ἐν τῷ κατ' ἐνέργειαν ψόφῳ δηλοῦνται· ὥσπερ γὰρ ἄνευ
φωτὸς οὐχ ὁρᾶται τὰ χρώματα, οὕτως οὐδ' ἄνευ ψόφου τὸ
ὀξὺ καὶ τὸ βαρύ. ταῦτα δὲ λέγεται κατὰ μεταφορὰν ἀπὸ
τῶν ἁπτῶν· τὸ μὲν γὰρ ὀξὺ κινεῖ τὴν αἴσθησιν ἐν ὀλίγῳ 30
χρόνῳ ἐπὶ πολύ, τὸ δὲ βαρὺ ἐν πολλῷ ἐπ' ὀλίγον. οὐ δὴ
ταχὺ τὸ ὀξύ, τὸ δὲ βαρὺ βραδύ, ἀλλὰ γίνεται τοῦ μὲν
διὰ τὸ τάχος ἡ κίνησις τοιαύτη, τοῦ δὲ διὰ βραδυτῆτα.
καὶ ἔοικεν ἀνάλογον ἔχειν τῷ περὶ τὴν ἁφὴν ὀξεῖ καὶ ἀμ- 420b
βλεῖ· τὸ μὲν γὰρ ὀξὺ οἷον κεντεῖ, τὸ δ' ἀμβλὺ οἷον ὠθεῖ
διὰ τὸ κινεῖν τὸ μὲν ἐν ὀλίγῳ τὸ δὲ ἐν πολλῷ, ὥστε συμ-
βαίνει τὸ μὲν ταχὺ τὸ δὲ βραδὺ εἶναι.

9 περὶ μὲν οὖν ψόφου ταύτῃ διωρίσθω. ἡ δὲ φωνὴ ψόφος τίς 5
ἐστιν ἐμψύχου· τῶν γὰρ ἀψύχων οὐθὲν φωνεῖ, ἀλλὰ καθ' ὁμοιό-
τητα λέγεται φωνεῖν, οἷον αὐλὸς καὶ λύρα καὶ ὅσα ἄλλα τῶν ἀψύ-
χων ἀπότασιν ἔχει καὶ μέλος καὶ διάλεκτον. ἔοικε γὰρ ὅτι
καὶ ἡ φωνὴ ταῦτ' ἔχει. πολλὰ δὲ τῶν ζῴων οὐκ ἔχουσι
φωνήν, οἷον τά τε ἄναιμα καὶ τῶν ἐναίμων ἰχθύες. καὶ 10
τοῦτ' εὐλόγως, εἴπερ ἀέρος κίνησίς τίς ἐστιν ὁ ψόφος. ἀλλ'

16. *αἰεὶ* ante *τὸ* om. S V X, leg. Them. Soph. || *ἀεὶ γὰρ*] *καὶ γὰρ* coni. Essen || 17. *ὁ* ante *ἐν* om. S T U W X, leg. Soph. || 19. *τὸν* om. S U V X, leg. Simpl. || 22. *ἀλλόμενα* S V X, *ἀφαλλόμενα* Them. Philop. Simpl. Soph. || 23. *κρούσῃ*] *ἐπικρούσῃ* coni. Essen || 24. *καὶ τύπτον* om. S U V X, leg. Philop. Simpl. Soph. (qui *ἢ* pro *καὶ* habet) || 25. *ἀθρόον* S T U V W X || 26. *ψόφων* T y Them. Soph. Theoph. ap. Prisc. 17, 25, *ψοφούντων* etiam Philop. Simpl. || 31. *ἐπ'* om. S U V W y, leg. Them. Philop. Simpl. || *οὐ δὴ*] *ὥστε οὐχὶ* T W Soph., *ὥστε οὐδὲ* V, *οὕτω* X, *οὐ δὴ* etiam Simpl., *οὐ δὴ*...33. *βραδυτῆτα* unc. incl. Susemihl, adversatur Rodier II, 299 || 33. *κίνησις*] *αἴσθησις* coni. Essen || 420 b, 2. pro *ἀμβλὺ οἷον* habet *βαρὺ ὥσπερ* P || 3. *συμβαίνειν* E S, *συμβαίνει* Simpl. Philop. Soph. || 8. *γὰρ*] *δὲ* S U V, *γὰρ* etiam Soph. post *γὰρ* virgulam posuit Rodier || 10. ἀλλ' *οὐδὲ τὰ ἔναιμα πάντα, οἷον ἰχθύες* P || post

the ears, as in a horn: for the air imprisoned there is always moving with a proper motion of its own. But sound is something of external origin and is not native to the ear. And this is why it is said that we hear by means of what is empty and resonant, because that by which we hear has air confined within it.

Does that which is struck emit the sound or that which strikes? 7 Is it not rather both, but each in a different way? For sound is motion of that which is capable of being moved in the same manner as things rebound from smooth surfaces when struck sharply against them. Thus, as above remarked, it is not everything which, when struck or striking, emits sound: supposing, for instance, a pin were to strike against a pin, there would be no sound. The thing struck must be of even surface, so that the air may rebound and vibrate in one mass.

The varieties of resonant bodies are clearly distinguished by the 8 sound they actually emit. For, as without light colours are not seen, so without sound we cannot distinguish high and low or acute and grave in pitch. These latter terms are used by analogy from tangible objects. For the acute, that is, the high, note moves the sense much in a little time, while the grave or low note moves it little in much time. Not that what is shrill is identically rapid, nor what is low is slow, but it is in the one case the rapidity, in the other the slowness, which makes the motion or sensation such as has been described. And it would seem that there is a certain analogy between the acute and grave to the ear and the acute and blunt to the touch. For that which is acute or pointed, as it were, stabs, while the blunt, as it were, thrusts, because the one excites motion in a short, the other in a long time, so that *per accidens* the one is quick, the other slow. Let this account of sound suffice.

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7 ἠχοῦντι, ὅτι ἀκούομεν τῷ ἔχοντι ὡρισμένον τὸν ἀέρα. πότερον δὲ ψοφεῖ τὸ τυπτόμενον ἢ τὸ τύπτον; ἢ καὶ ἄμφω, τρόπον δ' ἕτερον· ἔστι γὰρ ὁ ψόφος κίνησις τοῦ δυναμένου κινεῖσθαι τὸν τρόπον τοῦτον ὅνπερ τὰ ἀφαλλόμενα ἀπὸ τῶν λείων, ὅταν τις κρούσῃ. οὐ δὴ πᾶν, ὥσπερ εἴρηται, ψοφεῖ τυπτόμενον καὶ τύπτον, οἷον ἐὰν πατάξῃ βελόνη βελόνην· ἀλλὰ δεῖ τὸ τυπτόμενον ὁμαλὸν εἶναι, ὥστε τὸν ἀέρα ἀθροῦν
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οἱ λεγόμενοι φωνεῖν, οἷον ἐν τῷ Ἀχελῴῳ, ψοφοῦσι τοῖς
10 βραγχίοις ἤ τινι ἑτέρῳ τοιούτῳ. φωνὴ δ' ἐστὶ ζῴου ψόφος,
καὶ οὐ τῷ τυχόντι μορίῳ. ἀλλ' ἐπεὶ πᾶν ψοφεῖ τύπτοντός
τινος καί τι καὶ ἔν τινι, τοῦτο δ' ἐστὶν ἀήρ, εὐλόγως ἂν 15
φωνοίη ταῦτα μόνα ὅσα δέχεται τὸν ἀέρα. ἤδη γὰρ τῷ
ἀναπνεομένῳ καταχρῆται ἡ φύσις ἐπὶ δύο ἔργα, καθάπερ
τῇ γλώττῃ ἐπί τε τὴν γεῦσιν καὶ τὴν διάλεκτον, ὧν ἡ μὲν
γεῦσις ἀναγκαῖον (διὸ καὶ πλείοσιν ὑπάρχει), ἡ δ' ἑρμη-
νεία ἕνεκα τοῦ εὖ, οὕτω καὶ τῷ πνεύματι πρός τε τὴν θερ- 20
μότητα τὴν ἐντὸς ὡς ἀναγκαῖον (τὸ δ' αἴτιον ἐν ἑτέροις εἰ-
11 ρήσεται) καὶ πρὸς τὴν φωνήν, ὅπως ὑπάρχῃ τὸ εὖ. ὄργα-
νον δὲ τῇ ἀναπνοῇ ὁ φάρυγξ· οὗ δ' ἕνεκα καὶ τὸ μόριόν
ἐστι τοῦτο, πλεύμων· τούτῳ γὰρ τῷ μορίῳ πλεῖστον ἔχει τὸ
θερμὸν τὰ πεζὰ τῶν ἄλλων. δεῖται δὲ τῆς ἀναπνοῆς καὶ 25
ὁ περὶ τὴν καρδίαν τόπος πρῶτος. διὸ ἀναγκαῖον εἴσω ἀνα-
πνεομένου εἰσιέναι τὸν ἀέρα. ὥστε ἡ πληγὴ τοῦ ἀναπνεομένου
ἀέρος ὑπὸ τῆς ἐν τούτοις τοῖς μορίοις ψυχῆς πρὸς τὴν κα-
λουμένην ἀρτηρίαν φωνή ἐστιν. οὐ γὰρ πᾶς ζῴου ψόφος φωνή,
καθάπερ εἴπομεν (ἔστι γὰρ καὶ τῇ γλώττῃ ψοφεῖν καὶ 30
ὡς οἱ βήττοντες), ἀλλὰ δεῖ ἔμψυχόν τε εἶναι τὸ τύπτον
καὶ μετὰ φαντασίας τινός· σημαντικὸς γὰρ δή τις ψόφος
ἐστὶν ἡ φωνή· καὶ οὐ τοῦ ἀναπνεομένου ἀέρος, ὥσπερ ἡ βήξ,
12 ἀλλὰ τούτῳ τύπτει τὸν ἐν τῇ ἀρτηρίᾳ πρὸς αὐτήν. σημεῖον 421 a
δὲ τὸ μὴ δύνασθαι φωνεῖν ἀναπνέοντα μηδ' ἐκπνέοντα,
ἀλλὰ κατέχοντα· κινεῖ γὰρ τούτῳ ὁ κατέχων. φανερὸν δὲ
καὶ διότι οἱ ἰχθύες ἄφωνοι· οὐ γὰρ ἔχουσι φάρυγγα. τοῦτο
δὲ τὸ μόριον οὐκ ἔχουσιν, ὅτι οὐ δέχονται τὸν ἀέρα οὐδ' ἀνα- 5
πνέουσιν. δι' ἣν μὲν οὖν αἰτίαν, ἕτερός ἐστι λόγος.

13. post *ψόφος* Torst. censet excidisse: *οὐ πᾶς δέ*, vulgatam tuetur Soph., qui 14. *καὶ* omisit, *οὐ παντὸς δέ, ἀλλ' οὐδὲ παντὶ μορίῳ* in paraphr. Them. ‖ 15. *καὶ* ante *τι* om. T W Soph., leg. Philop. Simpl. ‖ 18. *τε* om. S U V W X, leg. Them. Soph. v. l. (om. *τε* cum codd. Hayduck 88, 36) ‖ 19. *καὶ* om. E T, leg. Them. Soph. ‖ 20. *ἕνεκεν* S T U V W X ‖ 21. *εἴρηται* S V W X Soph. et sine dubio Philop. 381, 4 ‖ 22. *ὑπάρχοι* E V, *ὑπάρχει* T W ‖ 23. *καὶ* om. E S U W y ‖ 24. *πνεύμων* S T U V W X y Them. Philop. Simpl. Soph. ‖ *πλεῖον* S U V W y Them. Soph., *πλέον* T ‖ 28. *ψυχικῆς δυνάμεως πρὸς* W y et Philop., vulgatam tuentur Simpl. Alex. apud Simpl. Soph. ‖ 30. *καὶ* prius om. S U V X, posterius E W, leg. *καὶ* utrobique Soph. ‖ 31. *τε* leg. etiam Soph., *τι* S U V X ‖ *τὸ τύπτον* unc. incl. Essen ‖ 32. *δή* om. S U V W X, leg. Soph. ‖ 33. *ἀναπνεομένου*] *ἀνάγκῃ ἐκπνεομένου* coni. Essen ‖ *βῆξις* E T y Them. (sed v. l. *βήξ*),

are said to possess voice, such as those in the Achelöus, merely make a noise with their gills or some other such part. Voice is 10 sound made by an animal, and not by any part of its body indifferently. But, as in every case of sound there is something that strikes, something struck and a medium, which is air, it is reasonable that only creatures which inhale air should have voice. For here nature uses the air that is inhaled for two purposes, just as it uses the tongue for tasting and for speech, the former use, for tasting, being indispensable and therefore more widely found, while expression of thought is a means to well-being. Similarly nature uses the breath first as a necessary means to the maintenance of internal warmth (the reason for which shall be explained elsewhere) and, further, as a means of producing voice and so promoting well-being. The organ of respiration is the larynx, and the part to which this 11 part is subservient is the lung: for it is this organ, namely, the lung, which enables land animals to maintain a higher temperature than others. Respiration is also needed primarily for the region about the heart. Hence, as we draw breath, the air enters: and so the impact upon the windpipe, as it is called, of the air breathed is voice, the cause of the impact being the soul which animates the vocal organs. For, as we said before, it is not every sound made by an animal that is voice. Noise can be produced even with the tongue or as in coughing: but it is necessary for voice that the part which strikes should be animate and that some mental image should be present. For voice is certainly a sound which has significance and is not like a cough, the noise of air respired: rather with this air the animal makes the air in the windpipe strike against the windpipe. A proof of this is the fact that we cannot speak while 12 inhaling or exhaling breath, but only while we hold it in: for anyone who holds his breath uses the breath so held to cause motion. And it is evident why fishes are voiceless. It is because they have no larynx. And they are without this part because they do not take in the air nor breathe. Why this is so does not concern us here.

βήξ etiam Philop. Simpl. Soph. || 421 a, 1. *τῷ οὕτω τύπτειν* coni. Essen || 3. *ἀλλὰ κατέχοντα* om. E y et Soph. || *τοῦτο* E V W Bek. Trend., *τούτῳ* Them. Philop. Simpl. Soph. vet. transl. Torst. || *δὲ*] *γὰρ* S T U V W || 5. *ἀναπνέουσιν. ἀλλ' οἱ λέγοντες οὕτως ἁμαρτάνουσιν. δι'* S V W et vet. transl., *ἀλλ' οἱ λέγοντες ὅτι φωνοῦσιν οἱ ἰχθύες διαμαρτάνουσιν. δι'* X, et certe Philoponus legit tale additamentum 384, 11 sqq. || 6. *μὲν οὖν*] *δ'* V X, om. S U || *ἔσται* S U V X Soph., *ἔστω* in paraphr. Philop.

9 Περὶ δὲ ὀσμῆς καὶ ὀσφραντοῦ ἧττον εὐδιόριστόν ἐστι τῶν εἰρημένων· οὐ γὰρ δῆλον ποῖόν τί ἐστιν ἡ ὀσμή, οὕτως ὡς ὁ ψόφος ἢ τὸ χρῶμα. αἴτιον δ' ὅτι τὴν αἴσθησιν ταύτην οὐκ ἔχομεν ἀκριβῆ, ἀλλὰ χείρω πολλῶν ζῴων· φαύλως γὰρ 10 ἄνθρωπος ὀσμᾶται, καὶ οὐθενὸς ὀσφραίνεται τῶν ὀσφραντῶν ἄνευ τοῦ λυπηροῦ ἢ τοῦ ἡδέος, ὡς οὐκ ὄντος ἀκριβοῦς τοῦ αἰσθη-
2 τηρίου. εὔλογον δ' οὕτω καὶ τὰ σκληρόφθαλμα τῶν χρωμάτων αἰσθάνεσθαι, καὶ μὴ διαδήλους αὐτοῖς εἶναι τὰς διαφορὰς τῶν χρωμάτων πλὴν τῷ φοβερῷ καὶ ἀφόβῳ· οὕτω 15 δὲ καὶ τὰς ὀσμὰς τὸ τῶν ἀνθρώπων γένος. ἔοικε μὲν γὰρ ἀνάλογον ἔχειν πρὸς τὴν γεῦσιν καὶ ὁμοίως τὰ εἴδη τῶν χυμῶν τοῖς τῆς ὀσμῆς, ἀλλ' ἀκριβεστέραν ἔχομεν τὴν γεῦσιν διὰ τὸ εἶναι αὐτὴν ἁφήν τινα, ταύτην δ' ἔχειν τὴν αἴσθησιν τὸν ἄνθρωπον ἀκριβεστάτην· ἐν μὲν γὰρ ταῖς ἄλλαις 20 λείπεται πολλῶν τῶν ζῴων, κατὰ δὲ τὴν ἁφὴν πολλῷ τῶν ἄλλων διαφερόντως ἀκριβοῖ. διὸ καὶ φρονιμώτατόν ἐστι τῶν ζῴων. σημεῖον δὲ τὸ καὶ ἐν τῷ γένει τῶν ἀνθρώπων παρὰ τὸ αἰσθητήριον τοῦτο εἶναι εὐφυεῖς καὶ ἀφυεῖς, παρ' ἄλλο δὲ μηδέν· οἱ μὲν γὰρ σκληρόσαρκοι ἀφυεῖς τὴν διάνοιαν, 25
3 οἱ δὲ μαλακόσαρκοι εὐφυεῖς. ἔστι δ', ὥσπερ χυμὸς ὁ μὲν γλυκὺς ὁ δὲ πικρός, οὕτω καὶ ὀσμαί (ἀλλὰ τὰ μὲν ἔχουσι τὴν ἀνάλογον ὀσμὴν καὶ χυμόν, λέγω δὲ οἷον γλυκεῖαν ὀσμὴν καὶ γλυκὺν χυμόν, τὰ δὲ τοὐναντίον)· ὁμοίως δὲ καὶ δριμεῖα καὶ αὐστηρὰ καὶ ὀξεῖα καὶ λιπαρά ἐστιν ὀσμή· 30 ἀλλ' ὥσπερ εἴπομεν, διὰ τὸ μὴ σφόδρα διαδήλους εἶναι τὰς ὀσμὰς ὥσπερ τοὺς χυμούς, ἀπὸ τούτων εἴληφε τὰ ὀνόματα καθ' ὁμοιότητα τῶν πραγμάτων· ἡ μὲν γὰρ γλυκεῖα [ἀπὸ **421 b** τοῦ] κρόκου καὶ μέλιτος, ἡ δὲ δριμεῖα θύμου καὶ τῶν τοιού-
4 των· τὸν αὐτὸν δὲ τρόπον καὶ ἐπὶ τῶν ἄλλων. ἔστι δ' ὥσπερ καὶ ἡ ἀκοὴ καὶ ἑκάστη τῶν αἰσθήσεων, ἡ μὲν τοῦ ἀκουστοῦ

8. ἡ om. S U X Philop., leg. Simpl. 151, 33 || *ὀδμή* E T W, *ὀσμή* Them. Simpl. Philop. Soph. || 9. *ψ. ἢ τὸ φῶς ἢ* T W X y Philop. 388, 4 Simpl. et, ut videtur, Them. 67, 29, om. *ἢ τὸ φῶς* Soph. || 10. *χείρονα* S W Philop. 386, 5 (v. l. *χεῖρον*), *χείρων* E, *χεῖρον* X Simpl. 152, 1 || 11. *ὀσφραίνεται* E T W vet. transl. Torst., *αἰσθάνεται* reliqui ante Torst. omnes et, ut videtur, Them. 67, 33 || 16. *ὀδμὰς* E T W y || *καὶ περὶ τὰς ὀσμὰς* P, *καὶ κατὰ τὰς ὀσμὰς* coni. Christ || 21. *πολλῶν*] *πολλῷ* E S U V Bek., *πολλῶν* sine dubio Them. 67, 30 Philop. 388, 19 Simpl. 151, 21. 30, *πολλοῖς* Soph. 91, 1 || *τῶν* ante *ζῴων* om. X P || *πολλῷ* E S T U V W y, etiam Them., qui 68, 9 *σύμπαντα πλεονεκτοῦμεν τὰ ζῷα* interpretatur, Philop. 386, 6. 388, 19 sq. Soph. 91, 2 Trend. Torst., om. X,

9 Of smell and the object of smell it is less easy to speak definitely than of the senses above-mentioned: for the nature of odour is by no means so clear as is the nature of sound or of colour. The reason is that this sense in us is not exact, but inferior to that of many animals. In fact, man has a poor olfactory sense and perceives none of the objects of smell unless they be painful or pleasant, which implies that the organ is wanting in accuracy. **2** It is reasonable to suppose that animals with hard eyes perceive colour in the same vague way and do not distinguish the varieties of colour except in so far as they do, or do not, inspire fear. And this is the way in which mankind perceive odours. For it would seem that, while there is an analogy to taste and the varieties of flavour answer to the varieties of smell, our sense of taste is more exact because it is a modification of touch and the sense of touch is the most exact of man's senses. In the other senses man is inferior to many of the animals, but in delicacy of touch he is far superior to the rest. And to this he owes his superior intelligence. This may be seen from the fact that it is this organ of sense and nothing else which makes all the difference in the human race between the natural endowments of man and man. For hard-skinned men are dull of intellect, while those who are soft-skinned are gifted.

Smell in man defective.

3 As with flavours, so with odours: some are sweet, some bitter. (But in some objects smell and flavour correspond; for example, they have sweet odour and sweet flavour: in other things the opposite is the case.) Similarly, too, an odour may be pungent, irritant, acid or oily. But because, as we said above, odours are not as clearly defined as the corresponding flavours, it is from these latter that the odours have taken their names, in virtue of the resemblance in the things. Thus the odour of saffron and honey is sweet, while the odour of thyme and the like is pungent; and so in all the other cases. **4** Again, smell corresponds to hearing and to each of the other senses in that, as hearing is of the audible and inaudible, and

Varieties of odour and flavour.

πολλῶν nulla codicum, quos quidem contulit, auctoritate Bek., confirmat P || τῶν ἄλλων om. X || 23. καὶ τὸ E S T W, om. καὶ X. || 27. ὀδμαὶ et 28. et 29. ὀδμὴν E || 27. ἀλλὰ... 29. τοὐναντίον in parenth. ponenda censet M. Alford, post 27. ὀσμαὶ et post 29. τοὐναντίον punct. vulg. || 29. τὰ δὲ τοὐναντίον ante 28. λέγω S U V X, eodem loco, quo vulgata, etiam Them. Philop. || 30. ὀδμή sine articulo E (Bhl.) || post ὀσμή punct. vulg. || 32. ὀδμὰς E || 421 b, 1. ἀπὸ τοῦ solus E vet. transl. Bek. Trend. Biehl, ἀπὸ τοῦ unc. incl. Rodier, om. reliqui, etiam Simpl. 153, 34 Torst., qui virgulam post γλυκεῖα et post 2. δριμεῖα posuit || 2. καὶ τοῦ μ. T Bek. Trend., τοῦ om. Simpl. || 4. καὶ ἡ om. S U V X, καὶ om. W Them. Bek. Trend., ἡ ἀκοὴ exstingui vult Madvig.

καὶ ἀνηκούστου, ἡ δὲ τοῦ ὁρατοῦ καὶ ἀοράτου, καὶ ἡ ὄσφρη- 5
σις τοῦ ὀσφραντοῦ καὶ ἀνοσφράντου. ἀνόσφραντον δὲ τὸ μὲν
παρὰ τὸ ὅλως ἀδύνατον ἔχειν ὀσμήν, τὸ δὲ μικρὰν ἔχον
καὶ τὸ φαύλην. ὁμοίως δὲ καὶ τὸ ἄγευστον λέγεται.

5 ἔστι δὲ καὶ ἡ ὄσφρησις διὰ τοῦ μεταξύ, οἷον ἀέρος ἢ ὕδατος·
καὶ γὰρ τὰ ἔνυδρα δοκοῦσιν ὀσμῆς αἰσθάνεσθαι, ὁμοίως καὶ 10
ἔναιμα καὶ ἄναιμα, ὥσπερ καὶ τὰ ἐν τῷ ἀέρι· καὶ γὰρ
τούτων ἔνια πόρρωθεν ἀπαντᾷ πρὸς τὴν τροφὴν ὕποσμα
6 γινόμενα. διὸ καὶ ἄπορον φαίνεται, εἰ πάντα μὲν ὁμοίως
ὀσμᾶται, ὁ δ' ἄνθρωπος ἀναπνέων, μὴ ἀναπνέων δὲ
ἀλλ' ἐκπνέων ἢ κατέχων τὸ πνεῦμα οὐκ ὀσμᾶται, οὔτε 15
πόρρωθεν οὔτ' ἐγγύθεν, οὐδ' ἂν ἐπὶ τοῦ μυκτῆρος ἐντὸς τεθῇ·
καὶ τὸ μὲν ἐπ' αὐτῷ τιθέμενον τῷ αἰσθητηρίῳ ἀναίσθητον
εἶναι κοινὸν πάντων· ἀλλὰ τὸ ἄνευ τοῦ ἀναπνεῖν μὴ αἰσθά-
νεσθαι ἴδιον ἐπὶ τῶν ἀνθρώπων· δῆλον δὲ πειρωμένοις· ὥστε
τὰ ἄναιμα, ἐπειδὴ οὐκ ἀναπνέουσιν, ἑτέραν ἄν τιν' αἴσθησιν 20
ἔχοι παρὰ τὰς λεγομένας. ἀλλ' ἀδύνατον, εἴπερ τῆς ὀσμῆς
αἰσθάνεται· ἡ γὰρ τοῦ ὀσφραντοῦ αἴσθησις καὶ δυσώδους
καὶ εὐώδους ὄσφρησίς ἐστιν. ἔτι δὲ καὶ φθειρόμενα φαίνεται
ὑπὸ τῶν ἰσχυρῶν ὀσμῶν ὑφ' ὧνπερ ἄνθρωπος, οἷον ἀσφάλ-
του καὶ θείου καὶ τῶν τοιούτων. ὀσφραίνεσθαι μὲν οὖν ἀναγ- 25
7 καῖον, ἀλλ' οὐκ ἀναπνέοντα. ἔοικε δὲ τοῖς ἀνθρώποις διαφέ-
ρειν τὸ αἰσθητήριον τοῦτο πρὸς τὸ τῶν ἄλλων ζῴων, ὥσπερ
τὰ ὄμματα πρὸς τὰ τῶν σκληροφθάλμων· τὰ μὲν γὰρ ἔχει
φράγμα καὶ ὥσπερ ἔλυτρον τὰ βλέφαρα, ἃ μὴ κινήσας
μηδ' ἀνασπάσας οὐχ ὁρᾷ· τὰ δὲ σκληρόφθαλμα οὐδὲν 30
ἔχει τοιοῦτον, ἀλλ' εὐθέως ὁρᾷ τὰ γινόμενα ἐν τῷ δια-
φανεῖ· οὕτως οὖν καὶ τὸ ὀσφραντικὸν αἰσθητήριον τοῖς μὲν
ἀκάλυφες εἶναι, ὥσπερ τὸ ὄμμα, τοῖς δὲ τὸν ἀέρα δεχο- 422a
μένοις ἔχειν ἐπικάλυμμα, ὃ ἀναπνεόντων ἀποκαλύπτεσθαι,
8 διευρυνομένων τῶν φλεβίων καὶ τῶν πόρων. καὶ διὰ τοῦτο

5. *καὶ τοῦ ἀνηκ.* T X ‖ *καὶ τοῦ ἀορ.* T X, utroque loco om. *τοῦ* Them. ‖ *ἡ* om. S V X, leg. Them. ‖ 6. *καὶ τοῦ ἀνοσφρ.* S T U X, om. *τοῦ* Them. ‖ 7. *ὀδμήν* E W ‖ 8. *τὸ* ante *φαύλην* om. S W X Bek. Trend., leg. Them. ‖ 10. *ὀδμῆς* E ‖ *ὁμοίως δὲ καὶ* S U V X Philop. Bek. Trend., *ὁμοίως καὶ* E (Trend.) et T W ‖ 11. *τὰ ἔναιμα καὶ τὰ ἀν.* S U V X Bek. Trend. Philop., *τὰ ἔναιμα* Soph. 92, 14 (<*καὶ τὰ ἄναιμα*> a Soph. omissa add. Hayduck) ‖ 13. *καὶ* om. E ‖ 14. et 15. *ὀδμ.* E ‖ 14. *μὲν* post *ἀναπνέων* S U V X Bek. Trend., *μὲν ὀσμᾶται* W, *μὲν* om. etiam Them. ‖ *μὴ ἀναπνέων δὲ* om. S U V X, leg. Them. ‖ 15. *ἀλλ' ἐκπνέων* om. W y Them. ‖ 16. post *τεθῇ* 16. et post *πειρωμένοις* 19. cola

sight of the visible and invisible, so smell is of the odorous and inodorous. By inodorous may be meant either that which is wholly incapable of having odour or that which has a slight or faint odour. The term tasteless involves a similar ambiguity.

The medium.

Further, smell also operates through a medium, namely, air or 5 water. For water animals, too, whether they are, or are not, possessed of blood, seem to perceive odour as much as the creatures in the air: since some of them also come from a great distance to seek their food, guided by the scent.

Inhalation a necessary condition in man.

Hence there is an obvious difficulty, if the process of smell is 6 everywhere the same, and yet man smells when inhaling but does not smell when instead of inhaling he is exhaling or holding his breath, no matter whether the object be distant or near, or even if it be placed on the inside of the nostril. The inability to perceive what is placed immediately on the sense-organ man shares with all animals: what is peculiar to him is that he cannot smell without inhaling. This is made plain by experiment. Consequently bloodless animals, since they do not breathe, might be thought to have a distinct sense other than those commonly recognised. But, we reply, that is impossible, since it is odour which they perceive. For perception of odour, be it fragrant or noisome, constitutes smelling. Moreover, it is found that these bloodless animals are destroyed by the same powerful odours as man, such as asphalt, brimstone and the like. It follows then that they do smell, but not by inhaling breath.

Nostrils.

It would seem, again, that in man the organ of this sense 7 differs from that of the other animals, as his eyes differ from those of hard-eyed animals. Man's eyes have, in the eyelids, a sort of screen or sheath and without moving or opening them he cannot see: while the hard-eyed animals have nothing of the kind, but at once see whatever is taking place in the transparent medium. So, too, it seems, the organ of smell in some animals is unenclosed, just as is the eye, but in those which take in the air it has a curtain, which is removed in the process of inhaling, by dilatation of the veins and passages. And this is the 8

ponenda censet Hayduck, progr. Gryph. 1873, p. 3, recte || 19. pro ἀνθρώπων legi vult ὀσφραντῶν Hayduck, quod probant Susemihl, Jen. Lit. Zt. 1877, p. 708 Rodier II, 312 Beare, p. 150, adn. 1 || 21. ἀλλ' ἀδύνατον a sensu suspecta videntur Trend., leg. Soph. et sine dubio Them. || 23. δὴ Ey, δὲ etiam Them. || 29. φράγμα] πῶμα W, quod ex priore editione huc illatum esse suspicatur Torst. || 31. εὐθὺς S U V X et in interpret. Them. Soph., εὐθέως Simpl. || 422 a, 3. φλεβῶν E Ṭ Them., φλεβίων etiam Philop.

τὰ ἀναπνέοντα οὐκ ὀσμᾶται ἐν τῷ ὑγρῷ· ἀναγκαῖον γὰρ
ὀσφρανθῆναι ἀναπνεύσαντα, τοῦτο δὲ ποιεῖν ἐν τῷ ὑγρῷ 5
ἀδύνατον. ἔστι δ' ἡ ὀσμὴ τοῦ ξηροῦ, ὥσπερ ὁ χυμὸς τοῦ ὑγροῦ,
τὸ δὲ ὀσφραντικὸν αἰσθητήριον δυνάμει τοιοῦτον.

10 Τὸ δὲ γευστόν ἐστιν ἁπτόν τι· καὶ τοῦτ' αἴτιον τοῦ μὴ
εἶναι αἰσθητὸν διὰ τοῦ μεταξὺ ἀλλοτρίου ὄντος σώματος·
οὐδὲ γὰρ ἡ ἁφή. καὶ τὸ σῶμα δὲ ἐν ᾧ ὁ χυμός, τὸ γευ- 10
στόν, ἐν ὑγρῷ ὡς ὕλῃ· τοῦτο δ' ἁπτόν τι. διὸ κἂν εἰ ἐν
ὕδατι ἦμεν, ᾐσθανόμεθ' ἂν ἐμβληθέντος τοῦ γλυκέος·
2 οὐκ ἦν δ' ἂν ἡ αἴσθησις ἡμῖν διὰ τοῦ μεταξύ, ἀλλὰ τῷ
μειχθῆναι τῷ ὑγρῷ, καθάπερ ἐπὶ τοῦ ποτοῦ. τὸ δὲ χρῶμα
οὐχ οὕτως ὁρᾶται τῷ μείγνυσθαι, οὐδὲ ταῖς ἀπορροίαις. ὡς 15
μὲν οὖν τὸ μεταξὺ οὐθέν ἐστιν· ὡς δὲ χρῶμα τὸ ὁρατόν, οὕτω
τὸ γευστὸν ὁ χυμός. οὐθὲν δὲ ποιεῖ χυμοῦ αἴσθησιν ἄνευ
ὑγρότητος, ἀλλ' ἔχει ἐνεργείᾳ ἢ δυνάμει ὑγρότητα, οἷον τὸ
ἁλμυρόν· εὔτηκτόν τε γὰρ αὐτὸ καὶ συντηκτικὸν γλώττης.
3 ὥσπερ δὲ καὶ ἡ ὄψις ἐστὶ τοῦ τε ὁρατοῦ καὶ τοῦ ἀοράτου (τὸ 20
γὰρ σκότος ἀόρατον, κρίνει δὲ καὶ τοῦτο ἡ ὄψις), ἔτι τοῦ
λίαν λαμπροῦ (καὶ γὰρ τοῦτο ἀόρατον, ἄλλον δὲ τρόπον τοῦ
σκότους), ὁμοίως δὲ καὶ ἡ ἀκοὴ ψόφου τε καὶ σιγῆς, ὧν
τὸ μὲν ἀκουστὸν τὸ δ' οὐκ ἀκουστόν, καὶ μεγάλου ψόφου,
καθάπερ ἡ ὄψις τοῦ λαμπροῦ (ὥσπερ γὰρ ὁ μικρὸς ψόφος 25
ἀνήκουστος, τρόπον τινὰ καὶ ὁ μέγας τε καὶ ὁ βίαιος), ἀό-
ρατον δὲ τὸ μὲν ὅλως λέγεται, ὥσπερ καὶ ἐπ' ἄλλων τὸ
ἀδύνατον, τὸ δ' ἐὰν πεφυκὸς μὴ ἔχῃ ἢ φαύλως, ὥσπερ
τὸ ἄπουν καὶ τὸ ἀπύρηνον· οὕτω δὴ καὶ ἡ γεῦσις τοῦ γευστοῦ
τε καὶ ἀγεύστου, τοῦτο δὲ τὸ μικρὸν ἢ φαῦλον ἔχον χυμὸν 30
ἢ φθαρτικὸν τῆς γεύσεως. δοκεῖ δ' εἶναι ἀρχὴ τὸ ποτὸν καὶ

7. *αἰσθ. τὸ δ.* S U X Them., *τὸ* om. Soph. || 10. *δὲ* om. S U X, leg. Simpl. || 11. *ὕλη* E (Trend.), *ὕλῃι* E (Bek. Bus.), *ὕλῃ* etiam ceteri codd. et Them. 70, 33 et Simpl. et Philop. et ap. Philop. Alex., qui etiam *ὕδατι* pro *ὕλῃ* legi tradit || *κἂν*] *καὶ* S U V W X, *κἂν* etiam Them. || 12. *εἴμεν* solus E, sed *ει* in rasura positum, videtur subfuisse *ἦμεν* (Trend.), *εἶμεν* Bek. Torst. || 12. *αἰσθανοίμεθ'* solus E Bek. Torst., *αἰσθανόμεθ'* T et, ut videtur, Them. 70, 24, *ἦμεν* et *ᾐσθανόμεθ'* leg. Philop. Soph. Trend. "essemus et sentiremus" vet. transl. || 17. *αἴσθησιν χυμοῦ* S U V, *χυμοῦ αἰσθ.* etiam Soph. || 18. *ἀλλ...ὑγρότητα* om. E, post *ἁλμυρόν* ponit T, vulgatam tuentur Them. Simpl. Soph. || 19. *τηκτόν* S U X Soph. || *γλώσσης* S U V || 20. de hoc loco *ὥσπερ*...31. *γεύσεως* vid. Bon. stud. Arist. II, III, 43, quem in distinguendis singulis enunciationis membris, praeeunte Biehlio, secutus sum || 20. *τε* om. E W, leg. Them. Philop. Soph. || *τοῦ* ante *ἀορ.* om. S T U W y, leg. Them. Philop. Soph. || 26. virgulam post *ἀνήκουστος* Bon. et Madvig, Advers. crit. I, p. 472, et iam Them. hunc locum ita interpretatus est, post *τινὰ* Bek.

reason why animals which breathe cannot smell in the water. For it is necessary for them to take in breath before smelling and this they cannot do in the water. Odour is included under that which is dry, as flavour under that which is moist, and the organ of smell is potentially dry also.

10 The object of taste is a species of tangible. And this is the reason why it is not perceived through a foreign body as medium: for touch employs no such medium either. The body, too, in which the flavour resides, the proper object of taste, has the moist, which is something tangible, for its matter or vehicle. Hence, even if we lived in water, we should still perceive anything sweet thrown into the water, but our perception would not have come through the medium, but by the admixture of sweetness with the fluid, as is the case with what we drink. But it is not in this way, namely, by admixture, that colour is perceived, nor yet by emanations. Nothing, then, corresponds to the medium; but to colour, which is the object of sight, corresponds the flavour, which is the object of taste. But nothing produces perception of flavour in the absence of moisture, but either actually or potentially the producing cause must have liquid in it: salt, for instance, for that is easily dissolved and acts as a dissolvent upon the tongue.

Taste has no external medium.

2

Moisture indispensable.

3 Again, sight is of the invisible as well as the visible (for darkness is invisible and this, too, sight discerns as well as light) and, further, of that which is exceedingly bright, which is likewise invisible, though in a different way from darkness. Similarly hearing has to do with noise and silence, the former being audible, the latter inaudible, and, further, with loud noise, to which it is related as vision is to brightness, a loud and a violent sound being in a manner just as inaudible as a faint sound. The term invisible, be it noted, is applied not only to that which it is wholly impossible to see, which corresponds to other cases of the impossible, but also when a thing has imperfectly or not at all its natural properties, answering to the footless and the kernel-less. So, too, taste has for object not only that which can be tasted, but also the tasteless, by which we mean that which has little flavour or hardly any at all, or a flavour destructive of the taste. Now in flavour this distinction is supposed to start with the drinkable and the

The object of taste.

Torst. Trend. || 27. <μὴ ἔχον χρῶμα> post ὅλως addendum censet Essen || 27. ὥσπερ... 28. ἀδύνατον in parenth. posuit Rodier || 28. ἂν E || 29. ἀπτὸν S, ἁπλοῦν E, ἄπουν Philop. Simpl. || τὸ ante ἀπύρ. om. E T U Simpl. || δὲ E T U W Simpl., δὴ etiam Them. 71, 7 et Soph. 94, 28 videntur legisse || 30. καὶ τοῦ ἀγ. S V Them., om. τοῦ Simpl. || ἢ] καὶ V X.

ἄποτον· γεῦσις γάρ τις ἀμφότερα· ἀλλὰ τὸ μὲν φαύλη
4 καὶ φθαρτικὴ τῆς γεύσεως, τὸ δὲ κατὰ φύσιν. ἔστι δὲ κοι-
νὸν ἁφῆς καὶ γεύσεως τὸ ποτόν. ἐπεὶ δ' ὑγρὸν τὸ γευστόν,
ἀνάγκη καὶ τὸ αἰσθητήριον αὐτοῦ μήτε ὑγρὸν εἶναι ἐντελε- 422b
χείᾳ μήτε ἀδύνατον ὑγραίνεσθαι. πάσχει γάρ τι ἡ γεῦ-
σις ὑπὸ τοῦ γευστοῦ, ᾗ γευστόν. ἀναγκαῖον ἄρα ὑγρανθῆναι
τὸ δυνάμενον μὲν ὑγραίνεσθαι σωζόμενον, μὴ ὑγρὸν δέ, τὸ
γευστικὸν αἰσθητήριον. σημεῖον δὲ τὸ μήτε κατάξηρον οὖσαν 5
τὴν γλῶτταν αἰσθάνεσθαι μήτε λίαν ὑγράν· αὕτη γὰρ ἁφὴ
γίνεται τοῦ πρώτου ὑγροῦ, ὥσπερ ὅταν προγευματίσας τις
ἰσχυροῦ χυμοῦ γεύηται ἑτέρου· καὶ οἷον τοῖς κάμνουσι πικρὰ
πάντα φαίνεται διὰ τὸ τῇ γλώττῃ πλήρει τοιαύτης ὑγρό-
5 τητος αἰσθάνεσθαι. τὰ δ' εἴδη τῶν χυμῶν, ὥσπερ καὶ ἐπὶ 10
τῶν χρωμάτων, ἁπλᾶ μὲν τἀναντία, τὸ γλυκὺ καὶ τὸ
πικρόν, ἐχόμενα δὲ τοῦ μὲν τὸ λιπαρόν, τοῦ δὲ τὸ ἁλμυρόν·
μεταξὺ δὲ τούτων τό τε δριμὺ καὶ τὸ αὐστηρὸν καὶ στρυφνὸν
καὶ ὀξύ· σχεδὸν γὰρ αὗται δοκοῦσιν εἶναι διαφοραὶ χυμῶν.
ὥστε τὸ γευστικόν ἐστι τὸ δυνάμει τοιοῦτον, γευστὸν δὲ τὸ ποιη- 15
τικὸν ἐντελεχείᾳ αὐτοῦ.

11 Περὶ δὲ τοῦ ἁπτοῦ καὶ περὶ ἁφῆς ὁ αὐτὸς λόγος· εἰ γὰρ ἡ
ἁφὴ μὴ μία ἐστὶν αἴσθησις ἀλλὰ πλείους, ἀναγκαῖον καὶ τὰ
ἁπτὰ αἰσθητὰ πλείω εἶναι. ἔχει δ' ἀπορίαν πότερον πλείους
εἰσὶν ἢ μία, καὶ τί τὸ αἰσθητήριον τὸ τοῦ ἁπτικοῦ, πότερον 20
ἡ σὰρξ καὶ ἐν τοῖς ἄλλοις τὸ ἀνάλογον, ἢ οὔ, ἀλλὰ τοῦτο
μέν ἐστι τὸ μεταξύ, τὸ δὲ πρῶτον αἰσθητήριον ἄλλο τί
2 ἐστιν ἐντός. πᾶσά τε γὰρ αἴσθησις μιᾶς ἐναντιώσεως εἶναι
δοκεῖ, οἷον ὄψις λευκοῦ καὶ μέλανος καὶ ἀκοὴ ὀξέος καὶ
βαρέος καὶ γεῦσις πικροῦ καὶ γλυκέος· ἐν δὲ τῷ ἁπτῷ 25
πολλαὶ ἔνεισιν ἐναντιώσεις, θερμὸν ψυχρόν, ξηρὸν ὑγρόν,
σκληρὸν μαλακόν, καὶ τῶν ἄλλων ὅσα τοιαῦτα. ἔχει δέ
τινα λύσιν πρός γε ταύτην τὴν ἀπορίαν, ὅτι καὶ ἐπὶ τῶν

32. *ἀμφοτέρου* coni. Trend. || 422 b, 1. *καὶ* om. S T V X Them. || 4. *μὲν* om. S U V W X, leg. Philop. et, ut videtur, Them. 71, 34 || 6. *γλῶσσαν* T U V W || *αὕτη*] coni. *αὐτοῦ* Torst., tuentur *αὕτη* Philop. Simpl. Soph. || *γὰρ ἡ ἁφὴ* E Simpl., *ἡ* om. Philop. Soph. || 8. *χυμοῦ* om. E, leg. Them. Soph. || 9. *τὴν γλῶτταν πλήρη* T W y || 13. *τὸ* ante *αὐστ.* om. S V W || 16. post *αὐτοῦ* excidisse putat *οἷον αὐτό* Torst., ac re vera in interpret. habent *οἷον αὐτό* et Them. et Philop. || 17. *καὶ περὶ*] *καὶ* S U V X Soph., *καὶ τῆς* W et fort. Simpl., *καὶ περὶ ἁφῆς* etiam Philop. Torst. || 20. *τὸ* ante *τοῦ* om. S V X Simpl. || *ἁπτικοῦ* omnes codd. praeter W, qui *ἁπτοῦ* habet, *ἁπτικοῦ* etiam Simpl.

undrinkable. Both are tastes of a sort, but the latter is poor or destructive of the faculty of taste, while the former is naturally adapted to it. The drinkable is the common object of touch and 4 of taste. But, since the object of taste is moist, the sense-organ which perceives it must be neither actually moist nor yet incapable of becoming moist. For taste is acted upon by the object of taste as such. The organ of taste, then, which needs to be moistened, must have the capacity of absorbing moisture without being dissolved, while at the same time it must not be actually moist. A proof of this is the fact that the tongue has no perception either when very dry or very moist. In the latter case the contact is with the moisture originally in the tongue, just as when a man first makes trial of a strong flavour and then tastes some other flavour; or as with the sick, to whom all things appear bitter because they perceive them with their tongue full of bitter moisture.

The organ.

As with the colours, so with the species of flavour, there are, 5 firstly, simple flavours, which are opposites, the sweet and the bitter; next to these on one side the succulent, on the other the salt; and, thirdly, intermediate between these, the pungent, the rough, the astringent and the acid. These seem to be practically all the varieties of flavour. Consequently, while the faculty of taste has potentially the qualities just described, the object of taste converts the potentiality into actuality.

Species of flavour.

The same account is to be given of touch and the tangible. **11** If touch is not a single sense but includes more senses than one, there must be a plurality of tangible objects also. It is a question whether touch is several senses or only one. What, moreover, is the sense-organ for the faculty of touch? Is it the flesh or what is analogous to this in creatures that have not flesh? Or is flesh, on the contrary, the medium, while the primary sense-organ is something different, something internal? We may argue thus: 2 every sense seems to deal with a single pair of opposites, sight with white and black, hearing with high and low pitch, taste with bitter and sweet; but under the tangible are included several pairs of opposites, hot and cold, dry and moist, hard and soft and the like. A partial solution of this difficulty lies in the con-

Touch.

Is it a single sense?

Soph. et, ut videtur, Them. 73, 12, ἀπτοῦ ἀπτικόν de coniect. scripsit Bek., quem secuti sunt Trend. Torst. || 21. ἡ om. S U V W, leg. Them. Simpl. Soph. || 23. τε om. X, huic τε respondet 25. δὲ, cf. Bz. Oestr. Gymn. Zeitschr. 1867, p. 680 || 26. εἰσὶν S T U V X.

ἄλλων αἰσθήσεών εἰσιν ἐναντιώσεις πλείους, οἷον ἐν φωνῇ οὐ
μόνον ὀξύτης καὶ βαρύτης, ἀλλὰ καὶ μέγεθος καὶ μικρότης 30
καὶ λειότης καὶ τραχύτης φωνῆς καὶ τοιαῦθ' ἕτερα. εἰσὶ δὲ
καὶ περὶ χρῶμα διαφοραὶ τοιαῦται ἕτεραι. ἀλλὰ τί τὸ ἓν τὸ ὑπο-
κείμενον, ὥσπερ ἀκοῇ ψόφος, οὕτω τῇ ἁφῇ, οὐκ ἔστιν ἔνδηλον.

3 πότερον δ' ἐστὶ τὸ αἰσθητήριον ἐντός, ἢ οὔ, ἀλλ' εὐ-
θέως ἡ σάρξ, οὐδὲν δοκεῖ σημεῖον εἶναι τὸ γίνεσθαι τὴν αἴ- 423a
σθησιν ἅμα θιγγανομένων. καὶ γὰρ νῦν εἴ τις περὶ τὴν σάρ-
κα περιτείνειεν οἷον ὑμένα ποιήσας, ὁμοίως τὴν αἴσθησιν εὐ-
θέως ἁψάμενος ἐνσημαίνει· καίτοι δῆλον ὡς οὐκ ἔστιν ἐν τούτῳ
4 τὸ αἰσθητήριον· εἰ δὲ καὶ συμφυὲς γένοιτο, θᾶττον ἔτι δι-
ικνοῖτ' ἂν ἡ αἴσθησις. διὸ τὸ τοιοῦτο μόριον τοῦ σώματος ἔοι-
κεν οὕτως ἔχειν ὥσπερ ἂν εἰ κύκλῳ ἡμῖν περιεπεφύκει ὁ
ἀήρ· ἐδοκοῦμεν γὰρ ἂν ἑνί τινι αἰσθάνεσθαι καὶ ψόφου καὶ
χρώματος καὶ ὀσμῆς, καὶ μία τις αἴσθησις εἶναι ὄψις ἀκοὴ
ὄσφρησις. νῦν δὲ διὰ τὸ διωρίσθαι δι' οὗ γίνονται αἱ κινήσεις, 10
φανερὰ τὰ εἰρημένα αἰσθητήρια ἕτερα ὄντα. ἐπὶ δὲ τῆς ἁφῆς
τοῦτο νῦν ἄδηλον· ἐξ ἀέρος μὲν γὰρ ἢ ὕδατος ἀδύνατον
συστῆναι τὸ ἔμψυχον σῶμα· δεῖ γάρ τι στερεὸν εἶναι. λείπεται
δὲ μεικτὸν ἐκ γῆς καὶ τούτων εἶναι, οἷον βούλεται <εἶναι> ἡ σὰρξ
καὶ τὸ ἀνάλογον· ὥστε ἀναγκαῖον καὶ τὸ σῶμα εἶναι τὸ μεταξὺ τοῦ 15
ἁπτικοῦ προσπεφυκός, δι' οὗ γίνονται αἱ αἰσθήσεις πλείους οὖ-
5 σαι. δηλοῖ δ' ὅτι πλείους ἡ ἐπὶ τῆς γλώττης ἁφή· ἁπάντων
γὰρ τῶν ἁπτῶν αἰσθάνεται κατὰ τὸ αὐτὸ μόριον καὶ χυμοῦ.
εἰ μὲν οὖν καὶ ἡ ἄλλη σὰρξ ᾐσθάνετο τοῦ χυμοῦ, ἐδόκει ἂν ἡ
αὐτὴ καὶ μία εἶναι αἴσθησις ἡ γεῦσις καὶ ἡ ἁφή· νῦν δὲ 20
δύο διὰ τὸ μὴ ἀντιστρέφειν.

33. *δῆλον* S U V X, *ἐν δῆλον* E, *ἐν δῆλον* T, *ἔνδηλον* etiam Simpl. Philop. || 423 a, 1. post *σάρξ* signum interrogationis Bek. Trend., virgulam Torst. || *τῶι* E || 2. *νῦν* om. S U V, leg. Them. || 4. *ἁψάμενον* P, *ἁψαμένοις* in interpret. Them., *ἁψαμένοις* vel *ἁψαμένῳ* coni. Trend., *ἁψαμένου* coni. Torst. || *ἐνσημήνειε* X, *ἂν ἐνσημαίνει* T || 6. *τοιοῦτον* S T U V W X, *τοιοῦτο* Philop. Them. (v. l. *τοιοῦτον*) || 9. *ὀδμῆς* E T W, *ὀσμῆς* Philop. || 10. *κινήσεις καὶ αἱ αἰσθήσεις* U, *αἰσθήσεις γρ.* S et Them. 73, 18, textum tuetur Soph. || 12. *τοῦτο μὲν νῦν* E T W, om. *μὲν* etiam Simpl. || *γὰρ*] *οὖν* coni. Essen || 13. pro *ἔμψυχον* coni. *μεταξὺ ὂν* Susemihl, Burs. Jahrb. IX, 351 || 14. *δὴ* V W Them. Bek. Trend. || post *βούλεται* excidisse *εἶναι καὶ* coni. Torst., *εἶναι* e Themistio et Sophonia recepit Biehl, nihil desiderandum censet Rodier || 15. *ἀνάλογον εἰ γὰρ πᾶσα αἴσθησις διὰ τοῦ μεταξύ, καὶ ἡ ἁφή* Ald. Basil., quod additamentum e Themistio (cf. 73, 27) fluxisse recte iudicat iam Basil. in margine || *ἀναγκαῖον καὶ*] *ἀναγκαῖον εἶναι καὶ* E, om. *καὶ* U Torst. || *τὸ σῶμα εἶναι*] *εἶναι τὸ σῶμα* U || *τὸ* ante *μεταξύ* T X y Them. Simpl. Torst.,

sideration that the other senses also apprehend more than one pair of opposites. Thus in vocal sound there is not only high and low pitch, but also loudness and faintness, smoothness and roughness, and so on. In regard to colour also there are other similar varieties. But what the one thing is which is subordinated to touch as sound is to hearing is not clear.

What is the organ?

But is the organ of sense internal or is the flesh the immediate organ? No inference can be drawn, seemingly, from the fact that the sensation occurs simultaneously with contact. For even under present conditions, if a sort of membrane were constructed and stretched over the flesh, this would immediately on contact transmit the sensation as before. And yet it is clear that the organ of sense is not in this membrane; although, if by growth it became united to the flesh, the sensation would be transmitted even more quickly. Hence it appears that the part of the body in question, that is, the flesh, is related to us as the air would be if it were united to us all round by natural growth. We should then have thought we were perceiving sound, colour and smell by one and the same instrument: in fact, sight, hearing and smell would have seemed to us in a manner to constitute a single sense. But as it is, owing to the media, by which the various motions are transmitted, being separated from us, the difference of the organs of these three senses is manifest. But in regard to touch this point is at present obscure.

In fact, the animate body cannot consist of air or water singly, it must be something solid. The only alternative is that it should be a compound of earth and of these elements, as flesh and what is analogous to flesh profess to be. Consequently the body must be the naturally cohering medium for the faculty of touch, through which the plurality of sensations is communicated. That they are a plurality is made clear by touch in the case of the tongue, for the tongue perceives all tangible objects, and that at the same part at which it perceives flavour. Now, if the rest of the flesh also had perception of flavour, taste and touch would have seemed to be one and the same sense: whereas they are really two, because their organs are not interchangeable.

quod probat etiam Steinhart, om. τὸ reliqui ante Biehlium omnes || 18. αἰσθεται S T U || 19. καὶ om. S U, leg. etiam Them. Simpl.

6 ἀπορήσειε δ' ἄν τις, εἰ πᾶν σῶμα βάθος ἔχει, τοῦτο δ' ἐστὶ
τὸ τρίτον μέγεθος· ὧν δ' ἐστὶ δύο σωμάτων μεταξὺ σῶμά τι,
οὐκ ἐνδέχεται ταῦτα ἀλλήλων ἅπτεσθαι· τὸ δ' ὑγρὸν οὐκ ἔστιν
ἄνευ σώματος, οὐδὲ τὸ διερόν, ἀλλ' ἀναγκαῖον ὕδωρ εἶναι ἢ ἔχειν 25
ὕδωρ· τὰ δὲ ἁπτόμενα ἀλλήλων ἐν τῷ ὕδατι, μὴ ξηρῶν τῶν ἄκρων
ὄντων, ἀναγκαῖον ὕδωρ ἔχειν μεταξύ, οὗ ἀνάπλεα τὰ ἔσχατα·
εἰ δὲ τοῦτ' ἀληθές, ἀδύνατον ἅψασθαι ἄλλο ἄλλου ἐν ὕδατι,
τὸν αὐτὸν δὲ τρόπον καὶ ἐν τῷ ἀέρι (ὁμοίως γὰρ ἔχει ὁ ἀὴρ
πρὸς τὰ ἐν αὐτῷ καὶ τὸ ὕδωρ πρὸς τὰ ἐν τῷ ὕδατι, λαν- 30
θάνει δὲ μᾶλλον ἡμᾶς, ὥσπερ καὶ τὰ ἐν τῷ ὕδατι ζῷα,
7 εἰ διερὸν διεροῦ ἅπτεται)· πότερον οὖν πάντων ὁμοίως 423b
ἐστὶν ἡ αἴσθησις, ἢ ἄλλων ἄλλως, καθάπερ νῦν δοκεῖ ἡ
μὲν γεῦσις καὶ ἡ ἁφὴ τῷ ἅπτεσθαι, αἱ δ' ἄλλαι ἄποθεν.
τὸ δ' οὐκ ἔστιν, ἀλλὰ καὶ τὸ σκληρὸν καὶ τὸ μαλακὸν δι'
ἑτέρων αἰσθανόμεθα, ὥσπερ καὶ τὸ ψοφητικὸν καὶ τὸ ὁρατὸν 5
καὶ τὸ ὀσφραντόν· ἀλλὰ τὰ μὲν πόρρωθεν, τὰ δ' ἐγγύθεν. διὸ
λανθάνει· ἐπεὶ αἰσθανόμεθά γε πάντων διὰ τοῦ μέσου· ἀλλ'
ἐπὶ τούτων λανθάνει. καίτοι καθάπερ εἴπαμεν καὶ πρότερον,
κἂν εἰ δι' ὑμένος αἰσθανοίμεθα τῶν ἁπτῶν ἁπάντων λανθά-
νοντος ὅτι διείργει, ὁμοίως ἂν ἔχοιμεν ὥσπερ καὶ νῦν ἐν 10
τῷ ὕδατι καὶ ἐν τῷ ἀέρι· δοκοῦμεν γὰρ νῦν αὐτῶν ἅπτεσθαι
8 καὶ οὐδὲν εἶναι διὰ μέσου. ἀλλὰ διαφέρει τὸ ἁπτὸν τῶν ὁρα-
τῶν καὶ τῶν ψοφητικῶν, ὅτι ἐκείνων μὲν αἰσθανόμεθα τῷ
τὸ μεταξὺ ποιεῖν τι ἡμᾶς, τῶν δὲ ἁπτῶν οὐχ ὑπὸ τοῦ με-
ταξὺ ἀλλ' ἅμα τῷ μεταξύ, ὥσπερ ὁ δι' ἀσπίδος πληγείς· 15
οὐ γὰρ ἡ ἀσπὶς πληγεῖσα ἐπάταξεν, ἀλλ' ἅμ' ἄμφω
9 συνέβη πληγῆναι. ὅλως δ' ἔοικεν ἡ σὰρξ καὶ ἡ γλῶττα, ὡς

22. ἀπορήσειε...423 b, 3. ἄποθεν. De hoc loco vid. Torst. et Bon., stud. Arist. II, III, 62, quem in interpungendis singulis enunciationis membris, praeeunte Biehlio, secutus sum || 23. δύο om. S U V X, leg. Soph. || 24. αὐτὰ E W y, ταῦτα Them. Soph. || 25. ὕδατος S V X, leg. ὕδωρ Simpl. || 27. οὗ] ᾧ S T U V X, οὗ Them. Soph. || 28. post ὕδατι punct. Bek. Trend. Torst., colon posuit Biehl || 30. τὸ om. T et E (Trend.), leg. Soph. || ἐν αὐτῷ τῷ ὕδ. E T W y, ἐν αὐτῷ ὕδ. Soph., reliqui et scripti et impressi ἐν τῷ ὕδ. || 31. ἡμᾶς ὁ ἀὴρ pro ἡμᾶς, ὥσπερ coni. Rodier II, 328 || ante καί, omisso ὥσπερ, legisse videtur τὰ ἐν τῷ ἀέρι Philop. 428, 26, fortasse etiam Soph. 98, 5 || post ζῷα vulg. virg. sustulit Rodier || 423 b, 1. ἁπάντων S U V W || 2. ἄλλως; καθ. Torst., ἄλλως, καθ. Bek. Trend. Bon. || 3. μὲν γεῦσις] μὲν γὰρ γεῦσις W, γεῦσις, omisso μέν, P || ἄποθεν; τὸ Trend., ἄποθεν. τὸ Bek. Torst. Bon. || 5. ψοφητὸν S X, ἔχον ψόφον P || 6. τὸ S V X || τὸ S U V X, τὰ utroque loco Soph. τὰ δὲ διὰ τὸ λίαν ἐγγὺς λανθάνει P || ἀλλὰ τὰ μὲν...7. λανθάνει interpolata esse censet Rodier II, 328 || post ἐγγύθεν

Contact in water and in air.

Here a question arises. All body has depth, this being the 6 third dimension, and, if between two bodies a third body is interposed, the two cannot touch one another. Now that which is fluid is not independent of body, nor is that which is wet: if it is not itself water, it must contain water. But when bodies touch one another in the water, since their exterior surfaces are not dry, there must be water between them, the water with which their extremities are flooded. If, then, all this be true, no one thing can possibly touch another in the water, nor yet in the air: for the air stands to the objects in the air as water to the things in water, but this fact we are more apt to overlook, just as aquatic animals fail to notice that the things which touch one another in the water have wet surfaces. The 7 question then arises: is the mode of perception uniform for all objects or does it differ for different objects? According to the prevalent view, taste and touch operate by direct contact, while the other senses operate at a distance. But this view is incorrect. On the contrary, we perceive the hard and the soft also mediately, just as much as we do the resonant, the visible, the odorous. But the latter are perceived at a distance, the former close at hand: and this is why the fact escapes us, since we really perceive all objects through a medium, though in touch and taste we fail to notice this. And yet, as we mentioned above, even if we perceived all objects of touch through a membrane without being aware of its interference, we should be just in the same position as we are now with regard to objects in the water or in the air: for, as it is, we suppose that we are touching the objects themselves and that there is no intervening medium. But there is 8 this difference between the tangible on the one hand and visible and resonant things on the other: the latter we perceive because the medium acts in a certain way upon us, while tangible objects we perceive not by any action upon us of the medium, but concurrently with it, like the man who is struck through his shield. It is not that the shield was first struck and then passed on the blow, but, as it happened, both were struck simultaneously. And, 9 generally, it would seem that the flesh and the tongue are related

The medium.

colon Torst. || 7. post λανθάνει virgulam Bek. Trend., colon Torst. || verba 7. ἐπεὶ... 8. λανθάνει unc. incl. Essen || 8. εἴπαμεν solus E, reliqui codd. εἴπομεν excepto P, qui ὥσπερ εἴρηται πρότερον habet || 9. ᾐσθανοίμεθα E, αἰσθανώμεθα S T U V X, αἰσθανοίμεθα etiam Them. || 11. ἐν om. S V W y || νῦν om. S U V X Bek. Trend. Torst., leg. etiam vet. transl. || 12. ὁρατικῶν E T y || 13. τῶν om. E P y Soph. || ἐκεῖνα E S T U V X, ἐκείνων P, etiam Soph. || μὲν om. P || 16. ἀλλ' ἅμ' ἄμφω e codd. solus E, etiam Them. Soph. vet. transl. Torst., ἅμ' om. reliqui ante Torst. omnes || 17. γλῶσσα S T U V X y.

ὁ ἀὴρ καὶ τὸ ὕδωρ πρὸς τὴν ὄψιν καὶ τὴν ἀκοὴν καὶ τὴν ὄσφρησιν ἔχουσιν, οὕτως ἔχειν πρὸς τὸ αἰσθητήριον ὥσπερ ἐκείνων ἕκαστον. αὐτοῦ δὲ τοῦ αἰσθητηρίου ἁπτομένου 20 οὔτ᾽ ἐκεῖ οὔτ᾽ ἐνταῦθα γένοιτ᾽ ἂν αἴσθησις, οἷον εἴ τις σῶμα [τὸ] λευκὸν ἐπὶ τοῦ ὄμματος θείη τὸ ἔσχατον. ᾗ καὶ δῆλον ὅτι ἐντὸς τὸ τοῦ ἁπτοῦ αἰσθητικόν. οὕτω γὰρ ἂν συμβαίνοι ὅπερ καὶ ἐπὶ τῶν ἄλλων· ἐπιτιθεμένων γὰρ ἐπὶ τὸ αἰσθητήριον οὐκ αἰσθάνεται, ἐπὶ δὲ τὴν σάρκα ἐπιτιθεμένων αἰσθάνεται· 25 ὥστε τὸ μεταξὺ τοῦ ἁπτικοῦ ἡ σάρξ.

10 ἁπταὶ μὲν οὖν εἰσὶν αἱ διαφοραὶ τοῦ σώματος ᾗ σῶμα· λέγω δὲ διαφορὰς αἳ τὰ στοιχεῖα διορίζουσι, θερμὸν ψυχρόν, ξηρὸν ὑγρόν, περὶ ὧν εἰρήκαμεν πρότερον ἐν τοῖς περὶ τῶν στοιχείων.

11 τὸ δὲ αἰσθητήριον αὐτῶν τὸ ἁπτικόν, καὶ ἐν ᾧ ἡ καλουμένη 30 ἁφὴ ὑπάρχει αἴσθησις πρώτῳ, τὸ δυνάμει τοιοῦτόν ἐστι μόριον· τὸ γὰρ αἰσθάνεσθαι πάσχειν τι ἐστίν. ὥστε τὸ ποιοῦν οἷον αὐτὸ 424a ἐνεργείᾳ τοιοῦτον ἐκεῖνο ποιεῖ δυνάμει ὄν. διὸ τοῦ ὁμοίως θερμοῦ καὶ ψυχροῦ ἢ σκληροῦ καὶ μαλακοῦ οὐκ αἰσθανόμεθα, ἀλλὰ τῶν ὑπερβολῶν, ὡς τῆς αἰσθήσεως οἷον μεσότητός τινος οὔσης τῆς ἐν τοῖς αἰσθητοῖς ἐναντιώσεως. καὶ διὰ τοῦτο κρίνει 5 τὰ αἰσθητά. τὸ γὰρ μέσον κριτικόν· γίνεται γὰρ πρὸς ἑκάτερον αὐτῶν θάτερον τῶν ἄκρων· καὶ δεῖ ὥσπερ τὸ μέλλον αἰσθήσεσθαι λευκοῦ καὶ μέλανος μηδέτερον αὐτῶν εἶναι ἐνεργείᾳ, δυνάμει δ᾽ ἄμφω (οὕτω δὲ καὶ ἐπὶ τῶν ἄλλων), καὶ ἐπὶ τῆς

12 ἁφῆς μήτε θερμὸν μήτε ψυχρόν. ἔτι δ᾽ ὥσπερ ὁρατοῦ καὶ 10 ἀοράτου ἦν πως ἡ ὄψις, ὁμοίως δὲ καὶ αἱ λοιπαὶ τῶν ἀντικειμένων, οὕτω καὶ ἡ ἁφὴ τοῦ ἁπτοῦ καὶ ἀνάπτου· ἄναπτον δ᾽ ἐστὶ τό τε μικρὰν ἔχον πάμπαν διαφορὰν τῶν ἁπτῶν, οἷον πέπονθεν ὁ ἀήρ, καὶ τῶν ἁπτῶν αἱ ὑπερβολαί, ὥσπερ τὰ φθαρτικά. καθ᾽ ἑκάστην μὲν οὖν τῶν αἰσθήσεων εἴρηται 15 τύπῳ.

20. ἁπτομένων U V X ‖ 21. τὸ ante σῶμα e priori editione suscepit Torst. ‖ 22. τὸ ante λευκὸν om. S U V X, unc. incl. Biehl ‖ ᾗ W, om. S U V, ᾗ etiam Simpl. ‖ 23. αἰσθητήριον T W, αἰσθητικὸν etiam Simpl. ‖ 24. ὥσπερ S U V X ‖ καὶ om. S T U V W X y ‖ 27. ἁπτὰ T U V Philop. Soph., αὗται P, ἁπταὶ etiam Simpl. 158, 23 sed αὗται ad hunc locum etiam in interpr. 164, 17. 18 ‖ 28. αἷς S U V X et fort. Soph. 100, 28 ‖ 29. περὶ τῶν στ. E T y Philop., τῶν om. Simpl. Soph. Bek. Trend. Torst. ‖ 31. ὑπάρχει αἴσθησις πρώτῳ E Simpl. 158, 25, ὑπάρχει αἴσθησις καὶ πρώτω T W, αἴσθησις πρώτως y, "in quo sensus vocatus tactus" vet. transl., αἴσθησις om. reliqui codd., etiam Them. Soph. Bek. Trend. Torst. ‖ 424 a, 2. post ἐνεργείᾳ vulg. virgulam sustuli ‖ τὸ δυνάμει ὂν e prima editione scripsit Torst. ‖ 2. ὁμοίου T U X, ὁμοίως etiam Them. Simpl. Soph. ‖ 3. καὶ prius] ἢ

to the true sense-organ as are air and water to the organs of sight, hearing and smell respectively. But neither in the one case nor in the other would sensation follow on contact with the sense-organ; for instance, if a body that is white were placed on the outer surface of the eye: which shows that the instrument that apprehends the tangible is within. We should then get the same result as in the case of the other senses. What is placed on the sense-organ we do not perceive: what is placed on the flesh we do perceive: therefore flesh is the medium for the faculty of touch.

It is, then, the distinctive qualities of body as body which are **10** the objects of touch: I mean those qualities which determine the elements, hot or cold, dry or moist, of which we have previously given an account in our discussion of the elements. And their sense-organ, the tactile organ, that is, in **11** which the sense called touch primarily resides, is the part which has potentially the qualities of the tangible object. For perceiving is a sort of suffering or being acted upon: so that when the object makes the organ in actuality like itself it does so because that organ is potentially like it. Hence it is that we do not perceive what is just as hot or cold, hard or soft, as we are, but only the excesses of these qualities: which implies that the sense is a kind of mean between the opposite extremes in the sensibles. This is why it passes judgment on the things of sense. For the mean is capable of judging, becoming to each extreme in turn its opposite. And, as that which is to perceive white and black must not be actually either, though potentially both, and similarly for the other senses also, so in the case of touch the organ must be neither hot nor cold. Further, sight is in a manner, **12** as we saw, of the invisible as well as the visible, and in the same way the remaining senses deal with opposites. So, too, touch is of the tangible and the intangible: where by intangible is meant, first, that which has the distinguishing quality of things tangible in quite a faint degree, as is the case with the air; and, secondly, tangibles which are in excess, such as those which are positively destructive. Each of the senses, then, has now been described in outline.

Tangible qualities.

Sense a mean.

The intangible.

S U W Them. Soph. || ᾗ] καὶ V || καὶ] ᾗ S U V Them. Soph. || 5. καὶ om. E, leg. Soph. || 6. αἰσθητήρια S T U X, αἰσθητά etiam Philop. Soph. || 9. οὕτω...ἄλλων in parenth. Torst. || δὴ S U W Bek. Trend., om. X || ἐπὶ ante τῆς om. S T V X.

12 Καθόλου δὲ περὶ πάσης αἰσθήσεως δεῖ λαβεῖν ὅτι ἡ μὲν αἴσθησίς ἐστι τὸ δεκτικὸν τῶν αἰσθητῶν εἰδῶν ἄνευ τῆς ὕλης, οἷον ὁ κηρὸς τοῦ δακτυλίου ἄνευ τοῦ σιδήρου καὶ τοῦ χρυσοῦ δέχεται τὸ σημεῖον, λαμβάνει δὲ τὸ χρυσοῦν ἢ τὸ 20 χαλκοῦν σημεῖον, ἀλλ' οὐχ ᾗ χρυσὸς ἢ χαλκός· ὁμοίως δὲ καὶ ἡ αἴσθησις ἑκάστου ὑπὸ τοῦ ἔχοντος χρῶμα ἢ χυμὸν ἢ ψόφον πάσχει, ἀλλ' οὐχ ᾗ ἕκαστον ἐκείνων λέγεται, ἀλλ' 2 ᾗ τοιονδί, καὶ κατὰ τὸν λόγον. αἰσθητήριον δὲ πρῶτον ἐν ᾧ ἡ τοιαύτη δύναμις. ἔστι μὲν οὖν ταὐτόν, τὸ δ' εἶναι ἕτε- 25 ρον· μέγεθος μὲν γὰρ ἄν τι εἴη τὸ αἰσθανόμενον· οὐ μὴν τό γε αἰσθητικῷ εἶναι οὐδ' ἡ αἴσθησις μέγεθός ἐστιν, ἀλλὰ λό- 3 γος τις καὶ δύναμις ἐκείνου. φανερὸν δ' ἐκ τούτων καὶ διὰ τί ποτε τῶν αἰσθητῶν αἱ ὑπερβολαὶ φθείρουσι τὰ αἰσθητή- ρια· ἐὰν γὰρ ᾖ ἰσχυροτέρα τοῦ αἰσθητηρίου ἡ κίνησις, λύε- 30 ται ὁ λόγος (τοῦτο δ' ἦν ἡ αἴσθησις), ὥσπερ καὶ ἡ συμ- 4 φωνία καὶ ὁ τόνος κρουομένων σφόδρα τῶν χορδῶν· καὶ διὰ τί ποτε τὰ φυτὰ οὐκ αἰσθάνεται, ἔχοντά τι μόριον ψυχι- κὸν καὶ πάσχοντά τι ὑπὸ τῶν ἁπτῶν αὐτῶν· καὶ γὰρ ψύχε- ται καὶ θερμαίνεται· αἴτιον γὰρ τὸ μὴ ἔχειν μεσότητα, μηδὲ 424b τοιαύτην ἀρχὴν οἵαν τὰ εἴδη δέχεσθαι τῶν αἰσθητῶν, ἀλλὰ 5 πάσχειν μετὰ τῆς ὕλης. ἀπορήσειε δ' ἄν τις εἰ πάθοι ἄν τι ὑπ' ὀσμῆς τὸ ἀδύνατον ὀσφρανθῆναι, ἢ ὑπὸ χρώματος τὸ μὴ δυνάμενον ἰδεῖν· ὁμοίως δὲ καὶ ἐπὶ τῶν ἄλλων. εἰ δὲ 5 τὸ ὀσφραντὸν ὀσμή, εἴ τι ποιεῖ, τὴν ὄσφρησιν ἡ ὀσμὴ ποιεῖ· ὥστε τῶν ἀδυνάτων ὀσφρανθῆναι οὐθὲν οἷόν τε πάσχειν ὑπ' ὀδμῆς· ὁ δ' αὐτὸς λόγος καὶ ἐπὶ τῶν ἄλλων· οὐδὲ τῶν δυ- νατῶν, ἀλλ' ᾗ αἰσθητικὸν ἕκαστον. ἅμα δὲ δῆλον καὶ οὕτως. οὔτε γὰρ φῶς καὶ σκότος οὔτε ψόφος οὔτε ὀσμὴ οὐδὲν ποιεῖ 10 τὰ σώματα, ἀλλ' ἐν οἷς ἐστίν, οἷον ἀὴρ ὁ μετὰ βροντῆς 6 διίστησι τὸ ξύλον. ἀλλὰ τὰ ἁπτὰ καὶ οἱ χυμοὶ ποιοῦσιν· εἰ

18. *εἰδῶν* om. SUX Soph. Torst., leg. Them. et sine dubio Simpl. Philop. || 19. *ὁ* om. ETy, leg. Them. Philop. Simpl. Soph. || 23. *ἐκείνων*] *ἐκείνινον* coni. Essen || 24. *τὸν* om. E (Trend.), *τοιονδὶ κατὰ λόγον* Soph. || 25. *ταὐτό* Ty Torst., *ταὐτά* SX, *ταὐτόν* Them. Philop. Simpl. || 26. *τι εἴη*] *ἦν* X || 28. *ἐκεῖνο* E, *ἐκείνου* etiam Them. Simpl. Soph. || 31. *ἦν* om. ETWy, leg. Them. Soph. || *τοῦτο...αἴσθησις* in parenth. Torst. || 34. *τι* om. SUX Them. || *ἁπτῶν αὐτῶν· καὶ* ETW, *αὐτῶν* om. ceteri codd. Them. Soph. Bek. Trend. Torst. Biehl in ed. pr. || 424 b, 2. *δέχεσθαι τὰ εἴδη* SVX, textum tuetur Them. || 4. *τι* om. ETWy Torst., leg. etiam Them. || *ὀδμῆς* ET || 6. *ὀδμή* E || virgulam post *ποιεῖ* omissam post *ὄσφρησιν* ponit Bek., correxit

12 In regard to all sense generally we must understand that sense is that which is receptive of sensible forms apart from their matter, as wax receives the imprint of the signet-ring apart from the iron or gold of which it is made: it takes the imprint which is of gold or bronze, but not *quâ* gold or bronze. And similarly sense as relative to each sensible is acted upon by that which possesses colour, flavour or sound, not in so far as each of those sensibles is called a particular thing, but in so far as it possesses a particular quality and in respect of its character or form.

What sense is. Illustration: seal upon wax.

2 The primary sense-organ is that in which such a power resides, the power to receive sensible forms. Thus the organ is one and the same with the power, but logically distinct from it. For that which perceives must be an extended magnitude. Sensitivity, however, is not an extended magnitude, nor is the sense: they are rather a certain character or power of the organ.

Faculty and organ.

3 From this it is evident why excesses in the sensible objects destroy the sense-organs. For if the motion is too violent for the sense-organ, the character or form (and this, as we saw, constitutes the sense) is annulled, just as the harmony and the pitch of the lyre suffer by too violent jangling of the strings.

4 It is evident, again, why plants have no sensation, although they have one part of soul and are in some degree affected by the things themselves which are tangible: for example, they become cold and hot. The reason is that they have in them no mean, no principle capable of receiving the forms of sensible objects without their matter, but on the contrary, when they are acted upon, the matter acts upon them as well.

Why plants have no sensation.

5 It might be asked whether what is unable to smell would be in any way acted upon by an odour, or that which is incapable of seeing by a colour, and so for the other sensibles. But, if the object of smell is odour, the effect it produces, if it produces an effect at all, is smelling. Therefore none of the things that are unable to smell can be acted upon by odour, and the same is true of the other senses: nor can things be acted upon when they have the power of sensation, except as they individually possess the particular sense required. This may also be shown as follows. Light and darkness do not act upon bodies at all; neither does sound nor odour: it is the things which possess them that act. Thus it is the air accompanying the thunderbolt which rives the timber.

Can the sensible affect things without sensation?

6 But, it may be said, things tangible and

Trend., quem secutus est Torst. || ἢ U W, om. S V X || ὀδμὴ E || 7. ὑπ' ὀδμῆς om. S U X || 9. ἑκάστου pro ἕκαστον fort. legendum esse censet Rodier II, 336 || 11. ὁ ἀὴρ S, ὁ ἀὴρ ὁ U W X, ἀὴρ V.

γὰρ μή, ὑπὸ τίνος ἂν πάσχοι τὰ ἄψυχα καὶ ἀλλοιοῖτο; ἆρ' οὖν κἀκεῖνα ἐμποιεῖ; ἢ οὐ πᾶν σῶμα παθητικὸν ὑπ' ὀσμῆς καὶ ψόφου· καὶ τὰ πάσχοντα ἀόριστα, καὶ οὐ μένει, οἷον 15 ἀήρ· ὄζει γὰρ ὥσπερ παθών τι. τί οὖν ἐστὶ τὸ ὀσμᾶσθαι παρὰ τὸ πάσχειν τι; ἢ τὸ μὲν ὀσμᾶσθαι καὶ αἰσθάνεσθαι, ὁ δ' ἀὴρ παθὼν ταχέως αἰσθητὸς γίνεται.

14. *ἐμποιεῖ* ETWy Biehl, *ἐμποιήσει* U, *ποιεῖ* Philop. in lemmate 443, 9, *ποιήσει* reliqui ante Biehlium omnes ‖ post *ἐμποιεῖ* interrogationis punctum om. Biehl in ed. alt. Rodier ‖ *ὀδμῆς* ETV ‖ 16. et 17. *τι* om. SUX ‖ 17. *καὶ* ante *αἰσθάνεσθαι* ex solo E (Bus.) addidit Torst., *καὶ* om. Philop.

flavours do so act; else by what agency are inanimate things acted upon or changed? Shall we, then, conclude that the objects of the other senses likewise act directly? Is it not rather the case that not all body can be affected by smell and sound, and that the bodies which are so affected are indeterminate and shifting; for example, air? For odour in the air implies that the air has been acted upon in some way. What then is smelling, besides a sort of suffering or being acted upon? Or shall we say that the act of smelling implies sense-perception, whereas the air, after it has been acted upon, so far from perceiving, at once becomes itself perceptible to sense?

ΠΕΡΙ ΨΥΧΗΣ Γ.

1 Ὅτι δ' οὐκ ἔστιν αἴσθησις ἑτέρα παρὰ τὰς πέντε (λέγω 22
δὲ ταύτας ὄψιν, ἀκοήν, ὄσφρησιν, γεῦσιν, ἁφήν), ἐκ τούτων
πιστεύσειεν ἄν τις. εἰ γὰρ παντός, οὗ ἐστὶν αἴσθησις ἁφή, καὶ
νῦν αἴσθησιν ἔχομεν (πάντα γὰρ τὰ τοῦ ἁπτοῦ ᾗ ἁπτὸν πάθη 25
τῇ ἁφῇ ἡμῖν αἰσθητά ἐστιν), ἀνάγκη τ', εἴπερ ἐκλείπει τις
αἴσθησις, καὶ αἰσθητήριόν τι ἡμῖν ἐκλείπειν· καὶ ὅσων μὲν
αὐτῶν ἁπτόμενοι αἰσθανόμεθα, τῇ ἁφῇ αἰσθητά ἐστιν, ἣν
τυγχάνομεν ἔχοντες, ὅσα δὲ διὰ τῶν μεταξὺ καὶ μὴ αὐ-
τῶν ἁπτόμενοι, τοῖς ἁπλοῖς, λέγω δ' οἷον ἀέρι καὶ ὕδατι· 30
2 ἔχει δ' οὕτως, ὥστ' εἰ μὲν δι' ἑνὸς πλείω αἰσθητὰ ἕτερα ὄντα
ἀλλήλων τῷ γένει, ἀνάγκη τὸν ἔχοντα τὸ τοιοῦτον αἰσθητή-
ριον ἀμφοῖν αἰσθητικὸν εἶναι (οἷον εἰ ἐξ ἀέρος ἐστὶ τὸ αἰσθη-
τήριον, καὶ ἔστιν ὁ ἀὴρ καὶ ψόφου καὶ χρόας), εἰ δὲ πλείω
τοῦ αὐτοῦ, οἷον χρόας καὶ ἀὴρ καὶ ὕδωρ (ἄμφω γὰρ δια- 425a
φανῆ), καὶ ὁ τὸ ἕτερον αὐτῶν ἔχων μόνον αἰσθήσεται τοῦ δι' ἀμ-
3 φοῖν· τῶν δὲ ἁπλῶν ἐκ δύο τούτων αἰσθητήρια μόνον ἐστίν,
ἐξ ἀέρος καὶ ὕδατος (ἡ μὲν γὰρ κόρη ὕδατος, ἡ δ' ἀκοὴ
ἀέρος, ἡ δ' ὄσφρησις θατέρου τούτων), τὸ δὲ πῦρ ἢ οὐθενὸς ἢ 5
κοινὸν πάντων (οὐθὲν γὰρ ἄνευ θερμότητος αἰσθητικόν), γῆ δὲ
ἢ οὐθενός, ἢ ἐν τῇ ἁφῇ μάλιστα μέμεικται ἰδίως· διὸ λείποιτ'
4 ἂν μηθὲν εἶναι αἰσθητήριον ἔξω ὕδατος καὶ ἀέρος· ταῦτα δὲ

22. Hinc etiam cod. L || 23. *τούτων* EW Soph., *τῶνδε δῆλον* SX, *τῶνδε* Bek. Trend. Torst. Biehl in ed. pr., etiam Them. || 24. huius enunciationis *εἰ γάρ*... apodosin incipit ab *ὥστε* 425a, 11. Torst., ab a, 9. *πᾶσαι ἄρα* Bon., quod iam Simpl. fecerat, in interpungendis singulis comprehensionis membris, praeeunte Biehlio, secutus sum Bon. || 25. *ἔχομεν αἴσθησιν* STUW, vulgatam tuentur Alex., *ἀπ. καὶ λύσ.* 89, 27 et Simpl. || 27. *τι* om. L, post *ἡμῖν* ponit W, *αἰσθητήριόν τι* etiam Alex. et Simpl. || *ἐκλιπεῖν* pr. E (Bek.) nunc *ἐκλείπειν* (Trend.), *ἐκλείπειν* etiam Alex. 90, 15 Them. Simpl. || 28. *αὐτοὶ* TWy Alex. 89, 30 et 90, 21, *αὐτῶν* etiam Simpl. 178, 29. 187, 21 et Soph. || 30. *ἁπλοῖς διαστήμασι* λ. TW et margo U, *ἁπλοῖς ἀποστήμασι* Simpl., vulgatam tuentur Alex. 89, 32. 90, 23 Philop. Soph. || 32. *ἀλλήλων ὄντα τῷ γένει* STUVWy, textum receptum tuentur Alex. 90, 35 et Simpl. || *τὸ* om. TUy Simpl.,

DE ANIMA. Book III.

No sixth sense.

That there is no other sense distinct from the five, by which **1** I mean sight, hearing, smell, taste, touch, anyone may convince himself on the following grounds. Let us assume that, as a matter of fact, we have sensation of every sensible object for which touch is the appropriate sense, all qualities of the tangible, as such, being perceptible to us through touch. Let us further assume that, when any sense is lacking to us, an organ of sense must also be lacking; and further, that whatever we perceive by actual contact is perceptible by touch, a sense which we do possess, while whatever we perceive mediately and not by actual contact is perceptible by means of the elements, namely, air and water. And here are implied two cases. Suppose, **2** first, we have perception by one and the same medium of two several things, different in kind from one another, then whoever possesses the appropriate sense-organ must be percipient of both: as, for example, if the sense-organ consists of air and air is also the medium of both sound and colour. Next suppose several media to transmit the same object, as both air and water transmit colour, both being transparent, then he who possesses one of these alone will perceive whatever is perceptible through both media. Now, of the elements, air and water are the only **3** two of which sense-organs are composed. For the pupil of the eye is of water, and the ear is of air, and the organ of smell is of one or the other, while fire, if present anywhere, enters into all, since nothing can be sentient without warmth. Earth, again, belongs to none of the sense-organs, or, at most, is a constituent peculiar to touch. It follows, then, that outside water and air there is no sense-organ. Now sense-organs composed of air and water **4**

leg. etiam Alex. 90, 36 || 425 a, 2. τοῦ δι'] τοῦν L, om. S U V X et pr. E Philop. 452, 21 Bek., τοῦ δι' T W y Simpl. vet. transl. Trend. Torst. || 6. γῆ δὲ] ἡ δὲ γῆ S U W, γῆ δὲ etiam Them. Philop. || 7. ἢ prius om. pr. E (Trend.) W, leg. Simpl. Philop. 453, 1 Soph. 106, 39, ἢ οὐθενὸς ἢ om. S U V, unc. incl. Essen || ἰδίως om. L U V X y, leg. Simpl. || διὸ in rasura E_2 (Bhl.), om. L S U V X || λίποιτ' E_1, λείποιτ' E_2 (Bhl.).

καὶ νῦν ἔχουσιν ἔνια ζῷα· πᾶσαι ἄρα αἱ αἰσθήσεις ἔχονται
ὑπὸ τῶν μὴ ἀτελῶν μηδὲ πεπηρωμένων· φαίνεται γὰρ καὶ 10
ἡ ἀσπάλαξ ὑπὸ τὸ δέρμα ἔχουσα ὀφθαλμούς· ὥστ' εἰ μή τι
ἕτερόν ἐστι σῶμα, καὶ πάθος ὃ μηθενός ἐστι τῶν ἐνταῦθα
σωμάτων, οὐδεμία ἂν ἐκλείποι αἴσθησις.

5 ἀλλὰ μὴν οὐδὲ τῶν κοινῶν οἷόν τ' εἶναι αἰσθητήριόν τι ἴδιον,
ὧν ἑκάστῃ αἰσθήσει αἰσθανόμεθα κατὰ συμβεβηκός, οἷον 15
κινήσεως, στάσεως, σχήματος, μεγέθους, ἀριθμοῦ, ἑνός· ταῦτα
γὰρ πάντα κινήσει αἰσθανόμεθα, οἷον μέγεθος κινήσει· ὥστε καὶ
σχῆμα· μέγεθος γάρ τι τὸ σχῆμα· τὸ δ' ἠρεμοῦν τῷ μὴ κι-
νεῖσθαι· ὁ δ' ἀριθμὸς τῇ ἀποφάσει τοῦ συνεχοῦς, καὶ τοῖς ἰδίοις·
ἑκάστη γὰρ ἓν αἰσθάνεται αἴσθησις. ὥστε δῆλον ὅτι ἀδύνατον 20
ὁτουοῦν ἰδίαν αἴσθησιν εἶναι τούτων, οἷον κινήσεως· οὕτω
6 γὰρ ἔσται ὥσπερ νῦν τῇ ὄψει τὸ γλυκὺ αἰσθανόμεθα. τοῦτο
δ' ὅτι ἀμφοῖν ἔχοντες τυγχάνομεν αἴσθησιν, ᾗ καὶ ὅταν συμ-
πέσωσιν ἅμα γνωρίζομεν· εἰ δὲ μή, οὐδαμῶς ἂν ἀλλ' ἢ κατὰ
συμβεβηκὸς ᾐσθανόμεθα, οἷον τὸν Κλέωνος υἱὸν οὐχ ὅτι 25
Κλέωνος υἱός, ἀλλ' ὅτι λευκός· τούτῳ δὲ συμβέβηκεν υἱῷ
7 Κλέωνος εἶναι. τῶν δὲ κοινῶν ἤδη ἔχομεν αἴσθησιν κοινήν,
οὐ κατὰ συμβεβηκός· οὐκ ἄρ' ἐστὶν ἰδία· οὐδαμῶς γὰρ ἂν
ᾐσθανόμεθα ἀλλ' ἢ οὕτως ὥσπερ εἴρηται τὸν Κλέωνος υἱὸν

11. *σπάλαξ* E S Bek., *πάλαξ* y, *ἀσπάλαξ* Them. Simpl. Philop. Soph. Trend. Torst. || *τοὺς ὀφθαλμούς* T U W y, *τοὺς* om. etiam Them. Philop. Soph. || 13. *μίαν λίποι* E, *μία ἂν ἐλλείποι* L y Simpl., *μία ἂν λείποιτο* T, *μία ἂν ἐκλείποι* E_2 S Alex. 90, 1 Them. Torst., *μία ἂν ἐκλίποι* reliqui ante Torst. omnes || 14. *ἀλλὰ*...b, 3. *εἶναι*. Totum hunc locum transponendo et emendando restituere voluit Susemihl, Burs. Jahresber. XXX, 42, aliter vero Essen II, 79 sqq., III, 14 || 15. *ὧν καὶ ἑκάστῃ* E Torst., *καὶ* om. ceteri codd. et Simpl. 183, 1 Philop. 457, 19 || *οὐ* a Torst. coni. et a Neuhaeusero, Ar. Lehre, p. 36, probatum in textum recepit Biehl, quamquam omiserunt omnes codd. et Them. Philop. Simpl., "non secundum accidens" vet. transl., *οὐ* non necessarium esse iudicant Zeller, Gesch. d. Phil. d. Gr. II, 2, p. 543 Brentano, l. l. 82 Kampe, d. Erkenntnistheorie des Arist. 104 Rodier || 15. *οἷον*...19. *συνεχοῦς* in parenthesi ponenda et ante 19. *καὶ τοῖς ἰδίοις* lacunam esse censet Susemihl || 16. post *ἀριθμοῦ* virgulam posuit Torst., iam Philop. hunc locum ita interpretatus est 457, 24 || *ἑνός* om. V || 17. *κινήσει* prius] *κοινῇ* e Simpl. scripsit Torst., sed et Simpl. 183, 4. 30 habet *κινήσει* (quod etiam 184, 7 scripsit Hayduck), *κινήσει* etiam Them. et Soph., probat Neuhaeuser, p. 32, *τῇ κινήσει* Prisc. L. 21, 17, addendum *ἄλλῃ* ante *κινήσει* censet Essen II, 79 || post *οἷον* lacunam esse eamque sic explendam putat Torst.: *κίνησιν· τὸ δέ*, vulgatam leg. Simpl. || 18. *μεγέθους* coni. Torst., *μέγεθος* etiam Philop. Soph., defendit Freudenthal, Rhein. Mus. 1869, p. 396 || *τι καὶ τὸ* L T W, *καὶ* om. etiam Philop. Soph. || 21. *οὕτω*...24. *γνωρίζομεν* et 27. *τῶν δὲ*...28. *ἰδία* posterioris, sed 24. *εἰ δὲ*...29. *εἴρηται* prioris recensionis esse iudicat Torst., quod refellit Neuhaeuser, p. 32 || 23. *καὶ* om. praeter E omnes codd. || 24. *ἅμα γνωρίζομεν* E Simpl. Torst., *ἀναγνωρίζομεν* T Bek. Trend., *γνωρίζομεν* reliqui ante Torst. omnes, etiam Philop. ||

certain animals do, in fact, possess. We may infer, then, that all the senses are possessed by those animals which are fully developed and are not crippled: even the mole is found to have eyes beneath its skin. And thus, unless there exists some unknown body or some property different from any possessed by any of the bodies within our experience, there can be no sixth sense which we lack.

Common sensibles.

Nor, again, can there be any special sense-organ for the common 5 sensibles, which we perceive incidentally by every sense; for example, motion, rest, figure, magnitude, number, unity. For all of these we perceive by motion. Thus it is by motion that we perceive magnitude, and consequently figure, figure being one variety of magnitude; while that which is at rest we perceive by the fact that it is not moved. Number we perceive by the negation of continuity and by the special sense-organs also: for each sensation has a single object. Clearly, then, it is impossible that there should be a special sense for any one of these; for example, motion: for in that case we should perceive them in the same way as we now perceive sweetness by sight (and this we 6 do because we have a sense which perceives both, and by this we actually apprehend the two simultaneously when they occur in conjunction). Otherwise we should never have more than an incidental perception of them; as of Cleon's son we perceive not that he is Cleon's son, but that he is a white object, and the fact of his being Cleon's son is accessory to the whiteness. But of the 7 common sensibles we have already a common perception, which is direct and not indirect, so that there cannot be a special sense for them. For, if there were, we should never perceive them otherwise than in the way in which we said we saw Cleon's son.

25. *αἰσθανοίμεθα* L, *αἰσθανόμεθα* E T U V W y Philop. ‖ 26. *κλέωνος γὰρ υἱός* S T V W ‖ *τοῦτο* L V X et, ut videtur, pr. E (Rr.) ‖ 27. *τῶν δὲ*...30. *ὁρᾶν* post b, 3. *εἶναι* transponenda censet Dembowski, Quaest. Ar. duae, pp. 85—91, probat Susemihl ‖ 27. *ἔχομεν ἤδη αἴσθησιν* L T U W, *ἔχομεν αἴσθησιν ἤδη* S V X ‖ 28. *οὐ κατὰ*...30. *ὁρᾶν* unc. incl. Essen III, 15 ‖ 28. *οὐκ ἄρ'*] *οὐ γὰρ* coni. Essen II, 81 ‖ *οὐδαμῶς*...30. *ὁρᾶν*, quae etiam Trend. suspecta sunt, ut prorsus hic inepta delenda censet Steinhart, cui assentitur Susemihl ‖ 28. *γὰρ*] *ἄρ'* coni. Essen l. l. ‖ 29. *ἢ* om. E L T V, leg. Simpl. Philop. ‖ *τὸν*...*ὁρᾶν* unc. inclusit Torst., quod probant etiam Neuhaeuser, p. 34 et Kampe et etiam dubitanter Dembowski, p. 89: sed v. p. 15.

ἡμᾶς ὁρᾶν. τὰ δ᾽ ἀλλήλων ἴδια κατὰ συμβεβηκὸς αἰσθά- 30
νονται αἱ αἰσθήσεις, οὐχ ᾗ αὐταί, ἀλλ᾽ ᾗ μία, ὅταν
ἅμα γένηται ἡ αἴσθησις ἐπὶ τοῦ αὐτοῦ, οἷον χολὴν ὅτι πι- 425b
κρὰ καὶ ξανθή· οὐ γὰρ δὴ ἑτέρας γε τὸ εἰπεῖν ὅτι ἄμφω
ἕν· διὸ καὶ ἀπατᾶται, καὶ ἐὰν ᾖ ξανθόν, χολὴν οἴεται εἶ-
8 ναι. ζητήσειε δ᾽ ἄν τις τίνος ἕνεκα πλείους ἔχομεν αἰσθήσεις,
ἀλλ᾽ οὐ μίαν μόνην. ἢ ὅπως ἧττον λανθάνῃ τὰ ἀκολουθοῦντα 5
καὶ κοινά, οἷον κίνησις καὶ μέγεθος καὶ ἀριθμός· εἰ γὰρ
ἦν ἡ ὄψις μόνη, καὶ αὕτη λευκοῦ, ἐλάνθανεν ἂν μᾶλλον
κἂν ἐδόκει ταὐτὰ εἶναι πάντα διὰ τὸ ἀκολουθεῖν ἀλλήλοις
ἅμα χρῶμα καὶ μέγεθος. νῦν δ᾽ ἐπεὶ καὶ ἐν ἑτέρῳ αἰ-
σθητῷ τὰ κοινὰ ὑπάρχει, δῆλον ποιεῖ ὅτι ἄλλο τι ἕκαστον 10
αὐτῶν.

2 Ἐπεὶ δ᾽ αἰσθανόμεθα ὅτι ὁρῶμεν καὶ ἀκούομεν, ἀνάγκη
ἢ τῇ ὄψει αἰσθάνεσθαι ὅτι ὁρᾷ, ἢ ἑτέρᾳ. ἀλλ᾽ ἡ αὐτὴ ἔσται
τῆς ὄψεως καὶ τοῦ ὑποκειμένου χρώματος. ὥστε ἢ δύο τοῦ
αὐτοῦ ἔσονται ἢ αὐτὴ αὑτῆς. ἔτι δ᾽ εἰ καὶ ἑτέρα εἴη ἡ τῆς 15
ὄψεως αἴσθησις, ἢ εἰς ἄπειρον εἶσιν ἢ αὐτή τις ἔσται αὑτῆς.
2 ὥστ᾽ ἐπὶ τῆς πρώτης τοῦτο ποιητέον. ἔχει δ᾽ ἀπορίαν· εἰ γὰρ
τὸ τῇ ὄψει αἰσθάνεσθαί ἐστιν ὁρᾶν, ὁρᾶται δὲ χρῶμα ἢ τὸ
ἔχον, εἰ ὄψεταί τις τὸ ὁρῶν, καὶ χρῶμα ἕξει τὸ ὁρῶν πρῶ-
3 τον. φανερὸν τοίνυν ὅτι οὐχ ἓν τὸ τῇ ὄψει αἰσθάνεσθαι· καὶ 20
γὰρ ὅταν μὴ ὁρῶμεν, τῇ ὄψει κρίνομεν καὶ τὸ σκότος καὶ
τὸ φῶς, ἀλλ᾽ οὐχ ὡσαύτως. ἔτι δὲ καὶ τὸ ὁρῶν ἔστιν ὡς κε-
χρωμάτισται· τὸ γὰρ αἰσθητήριον δεκτικὸν τοῦ αἰσθητοῦ ἄνευ

30. οὐ ante κατὰ συμβεβηκὸς addendum esse censet Essen || 31. ᾗ αὐταί T V W Simpl. 186, 5 Torst. Brentano, p. 97 Dembowski, αἱ αὐταί E L, ᾗ αἱ αὐταί S U y Bek. Trend., ᾗ αὐταί, ut videtur, Philop. 461, 5 sq., ᾗ αὗται X Soph. 107, 29 et v. l. Philop., cf. Prisc. 22, 4 οὐχ ᾗ μεμέρισται ἀλλ᾽ ᾗ συνῆπται τῇ μιᾷ || 425 b, 1. γένηται om. S U V || χολὴν ὅτι] ὅτι χολὴ S T U V W X y, χολὴν ὅτι E, sed ν eras. (Trend. Bhl.), χολὴ ὅτι Biehl in ed. alt. Rodier, οἷον χολῆς ὅτι Simpl. 186, 12 || 2. ἄμφω ἕν] ἓν ἄμφω coni. Susemihl || 3. καὶ ἐὰν] διὸ καὶ ἐὰν E, καὶ ἐὰν omisso διὸ etiam Simpl. || 4. πλείονας T W Philop., πλείους Simpl. Soph. || 5. μόνον S U X, μόνην etiam Simpl. || ἧττον] μὴ T V W X y, ἢ S, ἧττον etiam Simpl. Soph. || 7. ἡ om. S T U V W X || μόνον L, om. pr. E || αὕτη coni. H. Jackson, αὐτὴ vulg., καὶ αὐτὴ λευκοῦ unc. incl. Torst., leg. Philop. Simpl. et, ut videtur, Soph. 108, 25 || ἂν] κἂν E, sed κ in rasura (Trend.), ἂν etiam Simpl. Soph. || 8. κἂν] καὶ E y Soph. Bek. Trend., κἂν reliqui et corr. E_2 (Bhl.) || ταὐτὸν T X Simpl., ταὐτὸ W y Bek. Trend. Torst., τοῦτο S U, ταὐτὰ E (Bhl.) L V Soph. || πάντα] πάντως coni. Essen II, p. 82, probat Rodier II, 364 || 9. pro ἅμα coni. ἀεὶ Torst., leg. ἅμα Simpl. Soph. || 12. ἐπεὶ δ᾽] ἐπειδὴ δὲ Them., ἐπειδὴ γὰρ Philop. || 13. ἢ τῇ ὄψει] ἤτοι ὄψει Alex., ἀπ. καὶ λύσ. 91, 26 || ὅτι] εἴ τι

But the various senses incidentally perceive each other's proper objects, not as so many separate senses, but as forming a single sense, when there is concurrent perception relating to the same object; as, for instance, when we perceive that gall is bitter and yellow. For it is certainly not the part of any other sense to declare that both objects are one and the same. Hence you are sometimes deceived and, on observing something yellow, fancy it to be gall.

Perception per accidens of special sensibles. Unity of sense.

But, it might be asked, why have we several senses, instead of only one? I answer, it is in order that we may not be so likely to overlook the common attributes, such as motion, magnitude, number, which accompany the special sensibles. For, if sight had been our only sense and whiteness its object, we should have been more apt to overlook the common sensibles and to confuse all sensibles, because colour and magnitude, for instance, must always go together. As it is, the fact that the common attributes are found in the object of another sense also shows that they are severally distinct. 8

Why have we more senses than one?

Inasmuch as we perceive that we see and hear, it must either be by sight or by some other sense that the percipient perceives that he sees. But, it may be urged, the same sense which perceives sight will also perceive the colour which is the object of sight. So that either there will be two senses to perceive the same thing or the one sense, sight, will perceive itself. Further, if the sense perceiving sight were really a distinct sense, either the series would go on to infinity or some one of the series of senses would perceive itself. Therefore it will be better to admit this of the first in the series. Here, however, there is a difficulty. Assuming that to perceive by sight is to see and that it is colour or that which possesses colour which is seen, it may be argued that, if you are to see that which sees, that which in the first instance sees, the primary visual organ, will actually have colour. Clearly, then, to perceive by sight does not always mean one and the same thing. For, even when we do not see, it is nevertheless by sight that we discern both darkness and light, though not in the same manner. Further, that which sees is in a manner coloured. For the sense-organ is in every case 2 2 3

Perception that we perceive is by sense.

Difficulties.

Alex. l. l. || 15. καὶ εἰ E, om. καὶ y || ἡ ante τῆς ex solo E recepit Torst. || 16. ἄνευσιν L U W X, πρόεισιν in interpret. Them. || 17. ποιητέον] coni. θετέον vel δοτέον Torst., ποιητέον etiam Philop. Soph., δοτέον in interpret. Simpl. 188, 23. 31, vulg. defendit Bon., Ind. Ar. 609 a, 23 || 20. καὶ τὸ ὁρᾶν post τὸ τῇ ὄψει αἰσθάνεσθαι addenda esse censet Christ.

τῆς ὕλης ἕκαστον. διὸ καὶ ἀπελθόντων τῶν αἰσθητῶν ἔνει-
σιν αἱ αἰσθήσεις καὶ φαντασίαι ἐν τοῖς αἰσθητηρίοις. 25

4 ἡ δὲ τοῦ αἰσθητοῦ ἐνέργεια καὶ τῆς αἰσθήσεως ἡ αὐτὴ μέν ἐστι
καὶ μία, τὸ δ' εἶναι οὐ τὸ αὐτὸ αὐταῖς· λέγω δ' οἷον ὁ ψόφος ὁ κατ'
ἐνέργειαν καὶ ἡ ἀκοὴ ἡ κατ' ἐνέργειαν· ἔστι γὰρ ἀκοὴν ἔχοντα
μὴ ἀκούειν, καὶ τὸ ἔχον ψόφον οὐκ ἀεὶ ψοφεῖ. ὅταν δ' ἐνεργῇ
τὸ δυνάμενον ἀκούειν καὶ ψοφῇ τὸ δυνάμενον ψοφεῖν, τότε 30
ἡ κατ' ἐνέργειαν ἀκοὴ ἅμα γίνεται καὶ ὁ κατ' ἐνέργειαν ψό-
φος, ὧν εἴπειεν ἄν τις τὸ μὲν εἶναι ἄκουσιν τὸ δὲ ψόφησιν. 426a
5 εἰ δή ἐστιν ἡ κίνησις καὶ ἡ ποίησις καὶ τὸ πάθος ἐν τῷ ποιου-
μένῳ, ἀνάγκη καὶ τὸν ψόφον καὶ τὴν ἀκοὴν τὴν κατ' ἐνέρ-
γειαν ἐν τῇ κατὰ δύναμιν εἶναι· ἡ γὰρ τοῦ ποιητικοῦ καὶ κινη-
τικοῦ ἐνέργεια ἐν τῷ πάσχοντι ἐγγίνεται· διὸ οὐκ ἀνάγκη τὸ 5
κινοῦν κινεῖσθαι. ἡ μὲν οὖν τοῦ ψοφητικοῦ ἐνέργειά ἐστι
ψόφος ἢ ψόφησις, ἡ δὲ τοῦ ἀκουστικοῦ ἀκοὴ ἢ ἄκουσις· διττὸν
6 γὰρ ἡ ἀκοή, καὶ διττὸν ὁ ψόφος. ὁ δ' αὐτὸς λόγος καὶ ἐπὶ τῶν
ἄλλων αἰσθήσεων καὶ αἰσθητῶν. ὥσπερ γὰρ ἡ ποίησις καὶ ἡ
πάθησις ἐν τῷ πάσχοντι ἀλλ' οὐκ ἐν τῷ ποιοῦντι, οὕτω καὶ ἡ 10
τοῦ αἰσθητοῦ ἐνέργεια καὶ ἡ τοῦ αἰσθητικοῦ ἐν τῷ αἰσθητικῷ.
ἀλλ' ἐπ' ἐνίων μὲν ὠνόμασται, οἷον ἡ ψόφησις καὶ ἡ ἄκουσις, ἐπὶ
δ' ἐνίων ἀνώνυμον θάτερον· ὅρασις γὰρ λέγεται ἡ τῆς ὄψεως
ἐνέργεια, ἡ δὲ τοῦ χρώματος ἀνώνυμος, καὶ γεῦσις ἡ τοῦ
7 γευστικοῦ, ἡ δὲ τοῦ χυμοῦ ἀνώνυμος. ἐπεὶ δὲ μία μέν ἐστιν 15
ἡ ἐνέργεια ἡ τοῦ αἰσθητοῦ καὶ ἡ τοῦ αἰσθητικοῦ, τὸ δ' εἶναι ἕτε-
ρον, ἀνάγκη ἅμα φθείρεσθαι καὶ σῴζεσθαι τὴν οὕτω λεγο-
μένην ἀκοὴν καὶ ψόφον, καὶ χυμὸν δὴ καὶ γεῦσιν καὶ τὰ
ἄλλα ὁμοίως· τὰ δὲ κατὰ δύναμιν λεγόμενα οὐκ ἀνάγκη·

25. *αἱ* om. S W X Them. Simpl. Soph. || 26. *ἡ δὲ*...426 b, 7. *φθείρει* spuria esse suspicatur Susemihl, Oecon. p. 85 || 27. *οὐ τὸ αὐτὸ αὐταῖς* E (Trend.) L Torst., *οὐ ταὐτὸν αὐταῖς* Bek. Trend., *αὐταῖς οὐ ταὐτόν* S T U V W y Soph., *αὐταῖς οὐ τὸ αὐτό* Them. || *οἷον ὁ ψόφος ὁ* E L W Soph. Torst., *οἷον ψόφος ὁ* reliqui ante Torst. omnes || 28. *καὶ ἡ ἀκοὴ ἡ* E L Soph. Torst., *καὶ...ἐνέργειαν* om. T, *καὶ ἀκοὴ ἡ* reliqui ante Torst. omnes || 30. *τότε καὶ ἡ* T W || *τότε*...31. *γίνεται* om. E, sed. in marg. add. (Stapf.) || 426 a, 1. *ὧν*] *ὥστ'* T W, *ὥστε καὶ* S U V, *ὧν* leg. etiam Soph. || *εἴποιεν* E L, *εἴποι* y Soph., *φήσειεν* S U V X || 2. *εἰ*...12. *οἷον* e duabus recensionibus contaminata iudicat Torst., prioris esse 9. *ὥσπερ*...11. *αἰσθητικῷ*, posterioris 4. *ἡ γὰρ*...6. *κινεῖσθαι* || 2. *δ' ἐστιν* W Bek. Trend., *δή ἐστιν* E (Trend.) et reliqui codd. Soph. Torst. || *ποιουμένῳ*] *κινουμένῳ* Ald. Bywater, J. of Ph., p. 55 || 6. *ἐστὶν* ante *ἐνέργεια* E L, post 7. *ψόφησις* T y, om. Soph. || 9. *ὥσπερ*... 11. *αἰσθητικῷ* post 6. *κινεῖσθαι* transposuit Biehl, eodem quo vulg. ordine leg. etiam Philop. 474, 16 sqq. Soph. 111, 30 sqq. || 9. *ὥσπερ γὰρ*] *καὶ ὥσπερ* T W y, *ὥσπερ*

receptive of the sensible object without its matter. And this is why the sensations and images remain in the sense-organs even when the sensible objects are withdrawn.

Identity of sense and its object in the act of perception.

Now the actuality of the sensible object is one and the same 4 with that of the sense, though, taken in the abstract, sensible object and sense are not the same. I mean, for example, actual sound and actual hearing are the same: for it is possible to have hearing and yet not hear; again, that which is resonant is not always sounding. But when that which is capable of hearing operantly hears and that which is capable of sounding sounds, the actual hearing and the actual sound occur simultaneously, and we might, if we pleased, call them audition and resonance respectively. If, then, motion, action 5 and passivity reside in that which is acted upon, then of necessity it is in the potentiality of hearing that there is actual sound and there is actual hearing. For the activity of agent and movent comes into play in the patient; and this is why that which causes motion need not itself be moved. The actuality of the resonant, then, is sound or resonance, and the actuality of that which can hear is hearing or audition, hearing and sound both having two meanings. The same account may be given of the other senses and their objects. 6 For, just as acting and being acted upon are in the subject acted upon and not in the agent, so also the actuality of the sensible object and that of the sensitive faculty will be in the percipient subject. But in some cases both activities have a name; for example, resonance and audition: in other cases one or the other has no name. Thus, while the actuality of sight is called seeing, that of colour has no name; and, while the actuality of the taste-faculty is called tasting, that of the flavour has no name. Now, 7 as the actuality of the object and that of the faculty of sense are one and the same, although taken in the abstract they are different, hearing and sound thus understood as operant must simultaneously cease to be or simultaneously continue in being, and so also with flavour and taste, and similarly with the other senses and their objects: but when they are understood as potentialities, there is no

γὰρ καὶ E L || 10. ἀλλ'] καὶ L T U, ἀλλ' etiam Soph. || οὐκ ἐν] οὐ κἂν E (Rr.) || 11. ἐνέργεια...αἰσθητικοῦ om. T U W y, tuetur Philop. || 12. μὲν καὶ ἀνώμ. rec. E (Trend.) T U W X y Philop., καὶ om. Soph. || ἐπ' ἐνίων δ' L, ἐπ' ἐνίων δὲ Them. Soph. || 16. ἡ ἐνέργεια E Soph. v. l. (om. ἡ cum codd. Hayduck, 112, 14) Torst., om. ἡ reliqui ante Torst. omnes || ἡ post ἐνέργ. om. T V W y Soph. || ἡ post καὶ solus E, om. etiam Soph. || 17. ἄρα φθ. S T y, φθ. ἅμα L, ἅμα φθ. etiam Philop. Simpl. Soph.

8 ἀλλ' οἱ πρότερον φυσιολόγοι τοῦτο οὐ καλῶς ἔλεγον, οὐθὲν 20
οἰόμενοι οὔτε λευκὸν οὔτε μέλαν εἶναι ἄνευ ὄψεως, οὐδὲ χυ-
μὸν ἄνευ γεύσεως. τῇ μὲν γὰρ ἔλεγον ὀρθῶς, τῇ δ' οὐκ ὀρ-
θῶς· διχῶς γὰρ λεγομένης τῆς αἰσθήσεως καὶ τοῦ αἰσθητοῦ,
τῶν μὲν κατὰ δύναμιν τῶν δὲ κατ' ἐνέργειαν, ἐπὶ τούτων
μὲν συμβαίνει τὸ λεχθέν, ἐπὶ δὲ τῶν ἑτέρων οὐ συμβαίνει. 25
ἀλλ' ἐκεῖνοι ἁπλῶς ἔλεγον περὶ τῶν λεγομένων οὐχ ἁπλῶς.

9 εἰ δὴ συμφωνία φωνή τίς ἐστιν, ἡ δὲ φωνὴ καὶ ἡ
ἀκοὴ ἔστιν ὡς ἕν ἐστι, [καὶ ἔστιν ὡς οὐχ ἓν τὸ αὐτό], λό-
γος δ' ἡ συμφωνία, ἀνάγκη καὶ τὴν ἀκοὴν λόγον τινὰ εἶ-
ναι. καὶ διὰ τοῦτο καὶ φθείρει ἕκαστον ὑπερβάλλον, καὶ τὸ 30
ὀξὺ καὶ τὸ βαρύ, τὴν ἀκοήν· ὁμοίως δὲ καὶ ἐν χυμοῖς τὴν
γεῦσιν, καὶ ἐν χρώμασι τὴν ὄψιν τὸ σφόδρα λαμπρὸν ἢ ζο- 426b
φερόν, καὶ ἐν ὀσφρήσει ἡ ἰσχυρὰ ὀσμὴ καὶ γλυκεῖα καὶ πικρά,
[illegible] λόγου τινὸς ὄντος τῆς αἰσθήσεως. διὸ καὶ ἡδέα μέν, ὅταν
[illegible]κρινῆ καὶ ἀμιγῆ ὄντα ἄγηται εἰς τὸν λόγον, οἷον τὸ ὀξὺ ἢ
[illegible] ἢ ἁλμυρόν· ἡδέα γὰρ τότε· ὅλως δὲ μᾶλλον τὸ μεικ- 5
τόν, [illegible]νία ἢ τὸ ὀξὺ ἢ τὸ βαρύ, ἁφῇ δὲ τὸ θερμαντὸν ἢ ψυκ-
τόν· [illegible] λόγος· ὑπερβάλλοντα δὲ λυπεῖ ἢ φθείρει.

10 ἑκάστη μὲν [illegible] ὑποκειμένου αἰσθητοῦ
ἐστίν, ὑπάρχουσα ἐν τῷ αἰσθητηρίῳ [illegible] αἰσθητήριον, καὶ
κρίνει τὰς τοῦ ὑποκειμένου αἰσθητοῦ διαφ[illegible] οἷον λευ- 10
κὸν μὲν καὶ μέλαν ὄψις, γλυκὺ δὲ καὶ πικρὸν γεῦσις.
ὁμοίως δ' ἔχει τοῦτο καὶ ἐπὶ τῶν ἄλλων. ἐπεὶ δὲ καὶ τὸ

20. πρότεροι U V W, πρότερον Them. Soph. || 24. περὶ E S T V, ἐπὶ etiam Simpl. Soph. || 27. δὴ E (Trend.) S X y Simpl. Plutarch. ap. Simpl. Philop. Trend. Rodier, δὴ ἡ W, δ' ἡ reliqui codd. et Bek. Torst. Biehl, εἰ δ' ἡ φωνὴ συμφωνία τίς ἐστιν mavult Trend., probat Bywater, p. 55, secutus Prisc., qui praebet p. 22, 24: ἡ φωνὴ συμφωνία εἴρηται παρὰ τῷ 'Αριστ., ac sane in interpret. habet ἡ δὲ φωνὴ συμφωνία τις Soph. || ἡ post καὶ om. L S T U V X y Philop. 476, 10, leg. Soph. 112, 30 sq. || 28. ἐστι post ἓν solus E, om. etiam Philop. Soph. || καὶ ἔστιν...αὐτό unc. incl. Torst., quem secutus est Biehl in ed. alt., leg. etiam Soph., tuetur Rodier || τὸ αὐτὸ tantum in priore ed. unc. incl. Biehl, non legisse videtur Philop., ἢ οὐ τὸ αὐτὸ S T X y, οὐδὲ τὸ αὐτὸ V, καὶ τὸ αὐτὸ coni. Susemihl || 30. καὶ post τοῦτο om. L W, leg. Simpl. Soph. || 31. ὁμοίως δὲ om. S T U V W X y, leg. Soph. || 426 b, 1. ἢ τὸ ζ. S T U V W X y, τὸ om. etiam Soph. || 2. πικρά] λιπαρά E L et fortasse Philop. 476, 30, πικρά etiam Soph. || 3. διὸ om. S X et pr. U, διὸ καὶ om. V || 4. ἀμιγῆ ὄντα] ἀμιγῆ E Bek. Trend., ἀμιγῆ ἢ ὄντα L, ἄμικτα ὄντα S T V W X y et in paraphr. Simpl., ἀμιγῆ ὄντα U Soph. Torst. || ἄγεται E L, ἄγηται post 3. ὅταν S T U V W X y || 6. ante συμφωνία addendum esse εἰ censet Essen, <εἰ ἐν> συμφωνίᾳ coni. Susemihl, <ὥσπερ> συμφωνία vel <ἐν> συμφωνίᾳ <ὂν> Shorey, A. J. Ph. XXII, p. 162, fort. ἀκοῇ μὲν ante συμφωνία intelligas

such necessity. On this point the earlier natural philosophers were 8 in error, when they supposed that without seeing there was neither white nor black, and without tasting no flavour. Their statement is in one sense true, in another false. For the terms sensation and sensible thing are ambiguous. When they mean the actual sensation and the actual sensible thing, the statement holds good: when they mean potential sensation and potential sensible, this is not the case. But our predecessors used terms without distinguishing their various meanings.

Mistake of earlier thinkers.

If, then, concord consists in a species of vocal sound, and if vocal 9 sound and hearing are in one aspect one and the same, [*though in another aspect not the same*], and if concord is a proportion, it follows that hearing must also be a species of proportion. And this is the reason why hearing is destroyed by either excess, whether of high pitch or of low. And similarly, in the case of flavours, excess destroys the taste, and in colours excessive brightness or darkness destroys the sight, and so with smell, whether the excessive odour be agreeable or pungent. All this implies that the sense is a proportion. Hence sensibles are, it is true, pleasurable when they are brought into the range of this proportion pure and unmixed; for example, the shrill, the sweet, the salt: in that case, I say, they are pleasurable. But, speaking generally, that in which ingredients are blended is pleasurable in a higher degree, accord more pleasurable to the ear than high pitch or low pitch alone, and to touch that which admits of being still further heated or cooled. The due proportion constitutes the sense, while objects in excess give pain or cause destruction.

As in hearing, so generally the sense is a proportion.

Now each sense is concerned with its own sensible object, being 10 resident in the organ, *quâ* sense-organ, and judges the specific differences of its own sensible object. Thus sight pronounces upon white and black, taste upon sweet and bitter, and so with the rest.

licet || *συμφωνία...ψυκτόν* unc. incl. Torst., qui colon post *μεικτόν* posuit, *ἁφῇ...ψυκτόν* eici, sed *συμφωνία...βαρύ* retineri et post *μεικτόν* virgulam poni vult Dittenberger, p. 1614, totum locum interpretantur Simpl. Philop. || *ἁφῇ...ψυκτόν* post 5. *ἁλμυρόν* transposuit Biehl, quod iam Dittenberger l. l. voluerat || *ἢ τὸ βαρύ* E (Trend.), *καὶ τὸ βαρύ* L, *καὶ βαρύ* U V W, reliqui ante Biehlium omnes *ἢ βαρύ* || post *βαρύ* virg. Trend., vulg. punctum || *ἁφῇ* y Philop. Trend., *ἁφὴ* E (Bhl.) reliqui codd. et Bek., Soph. 113, 15 interpretatur *τὸ αὐτὸ δὲ καὶ ἐπὶ τῶν ἄλλων οἷον τῶν τῆς ἁφῆς*, unde *ἁφῆς* eum legisse suspicatur Biehl, *ἁφῆς* probat etiam Steinhart, *ἐν τῇ ἁφῇ* in interpr. Simpl., *ἀλέα δ' ἢ* pro *ἁφῇ δὲ* coni. Madvig, p. 473 || *θερμαντικὸν* et *ψυκτικόν* W X, vulgatam tuentur etiam Philop. Simpl. Soph. || 7. *ὁ* om. S U V y || *λυπεῖ*] *λύει* Soph. Bywater, p. 55, e Prisc. 22, 27 || 12. *καὶ* post *δὲ* om. T U V W y.

λευκὸν καὶ τὸ γλυκὺ καὶ ἕκαστον τῶν αἰσθητῶν πρὸς ἕκαστον
κρίνομεν, τίνι καὶ αἰσθανόμεθα ὅτι διαφέρει; ἀνάγκη δὴ αἰ-
11 σθήσει· αἰσθητὰ γάρ ἐστιν. ᾗ καὶ δῆλον ὅτι ἡ σὰρξ οὐκ ἔστι 15
τὸ ἔσχατον αἰσθητήριον· ἀνάγκη γὰρ ἦν ἁπτόμενον αὐτοῦ
κρίνειν τὸ κρῖνον. οὔτε δὴ κεχωρισμένοις ἐνδέχεται κρίνειν ὅτι
ἕτερον τὸ γλυκὺ τοῦ λευκοῦ, ἀλλὰ δεῖ ἑνί τινι ἄμφω δῆλα
εἶναι. οὕτω μὲν γὰρ κἂν εἰ τοῦ μὲν ἐγὼ τοῦ δὲ σὺ αἴσθοιο,
δῆλον ἂν εἴη ὅτι ἕτερα ἀλλήλων. δεῖ δὲ τὸ ἓν λέγειν ὅτι 20
ἕτερον· ἕτερον γὰρ τὸ γλυκὺ τοῦ λευκοῦ. λέγει ἄρα τὸ αὐτό.
12 ὥστε ὡς λέγει, οὕτω καὶ νοεῖ καὶ αἰσθάνεται. ὅτι μὲν οὖν οὐχ
οἷόν τε κεχωρισμένοις κρίνειν τὰ κεχωρισμένα, δῆλον· ὅτι
δ' οὐδ' ἐν κεχωρισμένῳ χρόνῳ, ἐντεῦθεν. ὥσπερ γὰρ τὸ αὐτὸ
λέγει ὅτι ἕτερον τὸ ἀγαθὸν καὶ τὸ κακόν, οὕτω καὶ ὅτε θά- 25
τερον λέγει ὅτι ἕτερον καὶ θάτερον (οὐ κατὰ συμβεβηκὸς τὸ
ὅτε· λέγω δ', οἷον νῦν λέγω ὅτι ἕτερον, οὐ μέντοι ὅτι νῦν ἕτε-
ρον· ἀλλ' οὕτω λέγει, καὶ νῦν, καὶ ὅτι νῦν)· ἅμα ἄρα. ὥστε
13 ἀχώριστον καὶ ἐν ἀχωρίστῳ χρόνῳ. ἀλλὰ μὴν ἀδύνατον ἅμα
τὰς ἐναντίας κινήσεις κινεῖσθαι τὸ αὐτὸ ᾗ ἀδιαίρετον καὶ ἐν 30
ἀδιαιρέτῳ χρόνῳ. εἰ γὰρ γλυκύ, ὡδὶ κινεῖ τὴν αἴσθησιν
ἢ τὴν νόησιν, τὸ δὲ πικρὸν ἐναντίως, καὶ τὸ λευκὸν ἑτέρως. 427a
ἆρ' οὖν ἅμα μὲν καὶ ἀριθμῷ ἀδιαίρετον καὶ ἀχώριστον τὸ
κρῖνον, τῷ εἶναι δὲ κεχωρισμένον; ἔστι δή πως ὡς τὸ διαι-
ρετὸν τῶν διῃρημένων αἰσθάνεται, ἔστι δ' ὡς ᾗ ἀδιαίρετον· τῷ
14 εἶναι μὲν γὰρ διαιρετόν, τόπῳ δὲ καὶ ἀριθμῷ ἀδιαίρετον. ᾗ 5

14. *τινὰ* L, *τινὶ* Soph. Bek., *τίνι* sine dubio Them., correxit Trend., qui post *διαφέρει* interrogationis signum posuit, secutus est Torst. ‖ *τίνι καὶ*] *τινὶ κοινῷ* coni. Essen ‖ 16. *γὰρ ἂν ἦν* W Torst., *ἂν* om. reliqui, etiam Philop. Soph. ‖ *αὐτοῦ*] *αὐτὸ* coni. Essen, cui assentitur Susemihl ‖ 19. *γὰρ*] *ἔχει* LV, *γὰρ ἔχει* E (Trend.), legit *οὕτω μὲν γὰρ κἂν εἰ* etiam Them. 85, 15 ‖ 20. verba *δεῖ*...21. *λευκοῦ* post., 21. *λέγει*... 22. *αἰσθάνεται* pr., recensionis esse iudicat Torst. ‖ 21. *λέγει ἄρα τὸ αὐτό* ut inertem repetitionem eiecta vult Trend., legit etiam Philop. in interpr. 483, 14 ‖ 22. *καὶ* om. STV ‖ *νοεῖ*] *φρονεῖ* UX, cui lectioni favet Rodier II, 386, *καὶ νοεῖ* etiam Philop. ‖ 24. *ἐν*] *ενι* E, *οὐδ' ἐνὶ ἐν* in textum recepit Torst., reliqui *οὐδ' ἐν κεχ.*, etiam Soph. ‖ 25. *τὸ* ante *κακόν* om. ELy ‖ 26. *καὶ* ante *οὐ κατὰ συμβεβηκὸς* et Them. 85, 25 et Philop. 483, 22 legisse suspicatur Rodier ‖ *οὐ κατὰ*...28. *ὅτι νῦν* in parenth. poni voluit Bywater, p. 55 ‖ 30. *διαίρετον* pr. E (Trend. Bus.), *ἀ* addidit antiqua manus (Trend.) ‖ 31. *τὸ γλυκύ* TW et rec. E Bek. Trend., defendit etiam Barco, p. 94, *τὸ* om. pr. E et reliqui ‖ 427a, 1. *ἢ*] *καὶ* rec. E in rasura (Rr.) STW ‖ 2. *ἆρ' οὖν*...3. *κεχωρισμένον* post., 3. *ἔστι δή*...5. *ἀδιαίρετον* pr., editionis esse iudicat Torst., quod refellit Neuhaeuser, p. 40 ‖ 2. *καὶ* post *μὲν* om. W, leg. *καὶ* etiam Alex., *ἀπ. καὶ λύσ.* 94, 12 ‖ *ἀριθμῷ ἐν ἀδιαίρετον* pr. E (Trend. Bus.), *ἐν ἀριθμῷ ἀδιαίρετον* rec. E (Trend. Bus.), *ἀριθμῷ ἀδιαί-*

But, since we compare white and sweet and each of the sensibles with each, what in fact is it by means of which we perceive the difference between them? It must be by sense, for they are sensibles. And thus it is clear that the flesh is not the ultimate organ of sense; for, if it were, it would be necessary that that which judges should judge by contact with the sensible object. Nor indeed can we with separate organs judge that sweet is different from white, but both objects must be clearly presented to some single faculty. For, if we could, then the mere fact of my perceiving one thing and your perceiving another would make it clear that the two things were different. But the single faculty is required to pronounce them different, for sweet and white are pronounced to be different. It is one and the same faculty, then, which so pronounces. Hence, as it pronounces, so it also thinks and perceives. Clearly, then, it is not possible with separate organs to pronounce judgment upon things which are separate: nor yet at separate times, as the following considerations show. For, as it is one single faculty which pronounces that good and bad are different, so when it judges "*A* is different from *B*" it also judges "*B* is different from *A*" (and in this case the "when" is not accidental; I mean, accidental in the sense in which I may now say "Such and such things are different" without saying that they are different now. On the contrary, it pronounces now and pronounces that *A* and *B* are different now). That which judges judges, then, instantaneously and hence as an inseparable unit in an inseparable time. But, again, it is impossible for the same thing, in so far as indivisible and affected in indivisible time, to be moved at the same instant with contrary motions. For, if the object be sweet, it moves sense or thought in such and such a way, but what is bitter moves it in a contrary way, and what is white in a different way. Is, then, that which judges instantaneous in its judgment and numerically undivided and inseparable, although separated logically? Then it is in a certain sense that which is divided which perceives divided objects; in another sense it is *quâ* indivisible that the divided perceives them: that is to say, logically it is divisible, locally and numerically it is indivisible. Or is

Comparison of heterogeneous sensibles. (margin; section numbers 11, 12, 13, 14)

A provisional hypothesis.

ρετον etiam Alex. l. l. || *καὶ χρόνῳ ἀχώριστον* U y et rc. E in litura (Trend. Bus.) Philop. 484, 10, *καὶ τόπῳ ἀχώριστον* coni. Susemihl, textum receptum tuetur Alex. l. l. et vet. transl. || *τὸ κρῖνον* om. corr. E (Trend. Bus.) || 3. *δή*] *δέ* S U Alex. || pro *τὸ διαιρ.* coni. *ὂν διαιρ.* Steinhart || 4. *ὡς* om. T W, leg. Alex. || *ᾗ*] *τὸ* X, om. Alex. || *διαιρετόν* pr. E, *ἀδιαίρετον* etiam Alex. || 5. *τόπῳ δὲ καὶ χρόνῳ καὶ ἀριθμῷ* U, *καὶ χρόνῳ* non habent Alex. Them. Simpl. Philop. || *οὐ διαιρετόν* T, *ἀδιαίρετον* etiam Alex. Simpl. Philop.

οὐχ οἷόν τε; δυνάμει μὲν γὰρ τὸ αὐτὸ καὶ ἀδιαίρετον τἀναντία, τῷ δ' εἶναι οὔ, ἀλλὰ τῷ ἐνεργεῖσθαι διαιρετόν, καὶ οὐχ οἷόν τε ἅμα λευκὸν καὶ μέλαν εἶναι, ὥστ' οὐδὲ τὰ εἴδη
15 *πάσχειν αὐτῶν, εἰ τοιοῦτον ἡ αἴσθησις καὶ ἡ νόησις. ἀλλ' ὥσπερ ἣν καλοῦσί τινες στιγμήν, ᾗ μία ἢ δύο, ταύτῃ* 10
καὶ διαιρετή. ᾗ μὲν οὖν ἀδιαίρετον, ἓν τὸ κρῖνόν ἐστι καὶ ἅμα, ᾗ δὲ διαιρετόν, οὐχ ἓν ὑπάρχει· δὶς γὰρ τῷ αὐτῷ χρῆται σημείῳ ἅμα· ᾗ μὲν οὖν δυσὶ χρῆται τῷ πέρατι, δύο κρίνει καὶ κεχωρισμένα ἐστὶν ὡς κεχωρισμένῳ· ᾗ δ' ἑνί, <ἓν> καὶ ἅμα. περὶ μὲν οὖν τῆς ἀρχῆς ᾗ φαμὲν τὸ ζῷον αἰσθητικὸν εἶναι, διω- 15
ρίσθω τὸν τρόπον τοῦτον.

3 *Ἐπεὶ δὲ δύο διαφοραῖς ὁρίζονται μάλιστα τὴν ψυχήν, κινήσει τε τῇ κατὰ τόπον καὶ τῷ νοεῖν καὶ τῷ κρίνειν καὶ αἰσθάνεσθαι, δοκεῖ δὲ καὶ τὸ νοεῖν καὶ τὸ φρονεῖν ὥσπερ αἰσθάνεσθαί τι εἶναι (ἐν ἀμφοτέροις γὰρ τούτοις κρίνει τι ἡ* 20
ψυχὴ καὶ γνωρίζει τῶν ὄντων), καὶ οἵ γε ἀρχαῖοι τὸ φρονεῖν καὶ τὸ αἰσθάνεσθαι ταὐτὸν εἶναί φασιν, ὥσπερ καὶ Ἐμπεδοκλῆς εἴρηκε "πρὸς παρεὸν γὰρ μῆτις ἀέξεται ἀνθρώποισιν" καὶ ἐν ἄλλοις "ὅθεν σφίσιν αἰεὶ καὶ τὸ φρονεῖν ἀλλοῖα παρίσταται," τὸ δ' αὐτὸ τούτοις βούλεται καὶ τὸ Ὁμή- 25
2 *ρου "τοῖος γὰρ νόος ἐστίν," πάντες γὰρ οὗτοι τὸ νοεῖν σωματικὸν ὥσπερ τὸ αἰσθάνεσθαι ὑπολαμβάνουσιν, καὶ αἰσθάνε-*

6. *καὶ ἀδιαίρετον*] *διαιρετὸν καὶ ἀδιαίρετον* U W y Torst., *καὶ διαιρετὸν καὶ ἀδιαίρετον* Them., *οὐ διαιρετὸν καὶ διῃρημένον* T, *ἀδιαίρετον καὶ διῃρημένον* rec. E in marg. (Rr.) X, textum receptum tuetur Alex. 94, 16 et vet. transl., defendit Neuhaeuser, p. 42 || *τἀναντία*] *καὶ τἀναντία* E U, om. y et, ut videtur, Them. 86, 12 Torst., leg. *τἀναντία* (omisso *καὶ*) etiam Alex. Philop. et vet. transl., *καὶ τοὐναντίον* coni. Susemihl || 7. *διαιρετόν*] *διαιρεῖται* coni. Torst. (quod quidem habet Philop. in interpr. 484, 21), *ἀδιαίρετον* Susemihl || 10. *ὥσπερ ἣν*] *ὥσπερ ἓν* coni. Trend. || *ἡ μία ἡ δύο* E, *ἡ μία καὶ δύο* L, *ᾗ μία καὶ ᾗ δύο* Bek. Trend. Torst., "aut unum aut duo" vet. transl., *ἡ μίαν ἡ δύο* Alex. 94, 20, *ἡ μία αἱ δύο* in codd. Alex. 96, 10, *ἡ μία, ᾗ δύο* coni. Rodier || 11. *καὶ* om. L, *καὶ ἀδιαίρετος καὶ διαιρετή*, quod in interpret. habent Them. et Simpl., in textum recepit Torst., vulgatam tuetur Alex. l. l. et vet. transl. || *ᾗ μὲν*...14. *ἅμα* e duab. rec. contam., post. 11. *ᾗ μὲν*...13. *ἅμα*, pr. 13. *ᾗ μὲν*...14. *ἅμα* iudicat Torst., cui adversatur Neuhaeuser, p. 40 || 11. *ἀδιαίρετος* E, sed *ς* in litura (Trend.), S T U Alex. || *καὶ ἅμα* om. y || 12. *διαιρετὸν ὑπάρχει οὐχ ἓν* Ald. Sylb. Basil. Torst., *διαιρετὸν οὐχ ἓν ὑπάρχει* E_2 (Bhl.) T y Soph., "non unum" vet. transl., *οὐχ ἓν* om. reliqui codd. et Alex. 94, 21 Bek. Trend., quibus assentitur Neuhaeuser, p. 45 || *δὶς γὰρ τῷ* E_2 T W vet. transl. Ald. Sylb. Basil. Torst., *διὸ γὰρ τῷ* y et, omisso *γὰρ*, Soph., *γὰρ* om. reliqui codd. et Alex. Bek. Trend. || 13. *ἅμα*] *μα* pr. E, add. *ἅ* rec. E (Rr.) || *ὡς δυσὶ* coni. Trend. et Torst. || virgulam a Bek. post *χρῆται* positam sustulerunt Trend. Torst. || ante *κεχωρισμένα* add. *τὰ* rec. E (Rr.) || 14. *κεχωρισμένῳ*] ita E L T Torst. Belger, reliqui codd. aut *κεχωρισμένων* aut *κεχωρισμένα*, *τῷ κεχωρισμένῳ* Alex., *κεχωρισμένον* Soph. 114, 38 || *ᾗ δὲ ἕν*, *ἑνὶ* T W y Alex. Simpl. vet.

this impossible? For the same indivisible unity, though in potentiality each of two opposites, in the order of thought and being is not so, but in actual operation is divided: it is impossible that it should be at the same time both white and black, and hence impossible that it should receive at the same time the forms of white and black, if reception of the forms constitutes sensation and thought. Rather is the case parallel to that of the point, as some describe it, which is divisible in so far as it is regarded as one or two. Well then, in so far as the faculty which judges is indivisible, it is one and judges instantaneously; but, in so far as it is divisible, it is not one, for it uses the same point at the same time twice. So far as it treats the boundary-point as two, it passes judgment on two separate things with a faculty which in a manner is separated into two; so far as it treats the point as one, it passes judgment on one thing, and that instantaneously. So much, then, for the principle in virtue of which we call the animal capable of sensation.

Objection.

15

Analogy of the point.

3 There are two different characteristics by which the soul is principally defined; firstly, motion from place to place and, secondly, thinking and judging and perceiving. Both thought and intelligence are commonly regarded as a kind of perception, since the soul in both of these judges and recognises something existent. The ancients, at any rate, identify intelligence and perception: thus, in the words of Empedocles: "Wisdom for mankind is increased according to that which is present to them": and again "Whence they have also continually a shifting succession of thoughts." Homer's meaning, too, is the same when he says: "Such is the mind of men." In fact, all of them conceive thought to be corporeal 2

Sensation and thought of old identified.

transl. Bek. Trend. Torst., ἑνὶ om. pr. U, ᾗ δὲ ἑνὶ ἅμα, omisso καὶ, etiam Soph., fort. ᾗ δὲ ἑνί, ἓν Christ || 15. αἰσθητικὸν εἶναι τὸ ζῷον S T U || ὁρίσθω E (Bek., etiam Bhl.) ὡρίσθω E (Rr.), διωρίσθω E_2 Soph. || 18. καὶ τὸ κρίνειν καὶ νοεῖν W, καὶ τῷ νοεῖν καὶ τῷ φρονεῖν S U V, τῷ κρίνειν καὶ νοεῖν Torst., vulgatam tuentur etiam in interpr. Simpl. 202, 8 sq. Philop. 489, 13 Soph. 115, 18 || 19. annotat in margine Bas.: post αἰσθάνεσθαι deesse videntur, quae Argyropylus reddidit his verbis: considerandum est, si quid intersit inter intelligere ac sentire. cui opinioni assentitur Torst., negat excidisse quicquam Bon., stud. Arist. II, III, 131, qui cum Plutarcho, Philopono, Simplicio apodosin, quam iam Alex. apud Philop. 489, 9 desideraverat, ab 427 b, 6. ὅτι μὲν οὖν incipit; in interpungendis singulis membris, praeeunte Biehlio, secutus sum Bon. || 19. δὲ] γὰρ coni. Susemihl || καὶ post δὲ om. L T || 20. γὰρ] τε γὰρ E S U, τε om. etiam Soph. || κρίνει τε ἡ ψυχὴ T, ἡ ψυχὴ κρίνει τι S U V W y, ἡ ψυχὴ κρίνει τε X, vulgatam tuetur etiam Soph. || 21. γε corr. E, τε S U V || 23. ἐναέξεται E_1, nunc αὔξεται (Bhl.), ἀέξεται etiam Them. Philop. 485, 24 Soph. || 25. τὸ δ' αὐτὸ...b, 6. ᾗ αὐτὴ εἶναι in parenth. ponenda putat Susemihl, Oecon., p. 85 || 25. βούλεται τούτοις S T U V W y, τὸ αὐτὸ τοῦτο sed post ο rasura E_2 (Bhl.) || 27. ὥσπερ καὶ τὸ S U V.

σθαί τε καὶ φρονεῖν τῷ ὁμοίῳ τὸ ὅμοιον, ὥσπερ καὶ ἐν τοῖς
κατ' ἀρχὰς λόγοις διωρίσαμεν· καίτοι ἔδει ἅμα καὶ περὶ
τοῦ ἠπατῆσθαι αὐτοὺς λέγειν, οἰκειότερον γὰρ τοῖς ζῴοις, 427b
καὶ πλείω χρόνον ἐν τούτῳ διατελεῖ ἡ ψυχή· διὸ ἀνάγκη
ἤτοι, ὥσπερ ἔνιοι λέγουσι, πάντα τὰ φαινόμενα εἶναι ἀληθῆ,
ἢ τὴν τοῦ ἀνομοίου θίξιν ἀπάτην εἶναι, τοῦτο γὰρ ἐναντίον τῷ
τὸ ὅμοιον τῷ ὁμοίῳ γνωρίζειν· δοκεῖ δὲ καὶ ἡ ἀπάτη καὶ 5
3 ἡ ἐπιστήμη τῶν ἐναντίων ἡ αὐτὴ εἶναι. ὅτι μὲν οὖν οὐ ταὐτόν
ἐστι τὸ αἰσθάνεσθαι καὶ τὸ φρονεῖν, φανερόν. τοῦ μὲν
γὰρ πᾶσι μέτεστι, τοῦ δὲ ὀλίγοις τῶν ζῴων. ἀλλ' οὐδὲ τὸ
νοεῖν, ἐν ᾧ ἐστὶ τὸ ὀρθῶς καὶ τὸ μὴ ὀρθῶς, τὸ μὲν ὀρθῶς
φρόνησις καὶ ἐπιστήμη καὶ δόξα ἀληθής, τὸ δὲ μὴ ὀρθῶς 10
τἀναντία τούτων, οὐδὲ τοῦτο [δ'] ἐστὶ ταὐτὸ τῷ αἰσθάνεσθαι· ἡ
μὲν γὰρ αἴσθησις τῶν ἰδίων ἀεὶ ἀληθής, καὶ πᾶσιν ὑπάρ-
χει τοῖς ζῴοις, διανοεῖσθαι δ' ἐνδέχεται καὶ ψευδῶς, καὶ
4 οὐδενὶ ὑπάρχει ᾧ μὴ καὶ λόγος. φαντασία γὰρ ἕτερον καὶ
αἰσθήσεως καὶ διανοίας· αὐτή τε οὐ γίγνεται ἄνευ αἰσθή- 15
σεως, καὶ ἄνευ ταύτης οὐκ ἔστιν ὑπόληψις. ὅτι δ' οὐκ ἔστιν
ἡ αὐτὴ νόησις καὶ ὑπόληψις, φανερόν. τοῦτο μὲν γὰρ τὸ
πάθος ἐφ' ἡμῖν ἐστίν, ὅταν βουλώμεθα (πρὸ ὀμμάτων γὰρ
ἔστι τι ποιήσασθαι, ὥσπερ οἱ ἐν τοῖς μνημονικοῖς τιθέμενοι καὶ
εἰδωλοποιοῦντες), δοξάζειν δ' οὐκ ἐφ' ἡμῖν· ἀνάγκη γὰρ ἢ 20
ψεύδεσθαι ἢ ἀληθεύειν. ἔτι δὲ ὅταν μὲν δοξάσωμεν δεινόν
τι ἢ φοβερόν, εὐθὺς συμπάσχομεν, ὁμοίως δὲ κἂν θαρρα-
λέον· κατὰ δὲ τὴν φαντασίαν ὡσαύτως ἔχομεν ὥσπερ ἂν εἰ
5 θεώμενοι ἐν γραφῇ τὰ δεινὰ ἢ θαρραλέα. εἰσὶ δὲ καὶ αὐτῆς
τῆς ὑπολήψεως διαφοραί, ἐπιστήμη καὶ δόξα καὶ φρόνησις καὶ 25
τἀναντία τούτων, περὶ ὧν τῆς διαφορᾶς ἕτερος ἔστω λόγος.

29. *καίτοι...*b, 2. *ἡ ψυχή* unc. incl. Essen III, p. 17 || 427 b, 2. *τούτοις* S T V y, *τούτῳ* etiam Simpl. Soph. || 4. *τῷ*] *τὸ* S, *ᾧ* L, om. T U || 5. *τὸ ὅμοιον τῷ ὁμοίῳ* S T U V X y et E (Trend. Bhl.), *τῷ ὁμ. τὸ ὅμ.* T W Bek. Trend. Torst. || *δοκεῖ δὲ οὕτω* coni. Susemihl B. J. XXX, 47 || 6. *ὅτι...*16. *ὑπόληψις*. Hunc locum restituere tentat Essen III, 17 sqq. || 6. *ταὐτόν*] *τὸ αὐτό* pr. E (Trend.) y || 9. *μὲν γὰρ ὀρθῶς* T U W y et rec. E, om. *γὰρ* etiam Soph. || 11. *δ'* om. y Philop., *δ'* delendum esse censet etiam Vahlen, Oest. Gymn. Ztschr. 1868, p. 256 || *ταὐτὸν* L Philop., *τὸ αὐτὸ* S T U V W X || 14. post *λόγος* punctum posui, vulg. colon || *φαντασία γὰρ...*24. *θαρραλέα* ab hoc loco aliena esse iudicat Freudenthal, p. 11, cui assentitur Susemihl, Phil. Woch. 1882, p. 1283 || *ᾧ μὴ καὶ φαντασία· ἕτερον γὰρ* (sc. *ἡ φαντ.*) *καὶ κτλ.* coni. Steinhart || 15. *δὲ* pro *τε* coni. Susemihl || 16. *ὅτι δ'...*25. *διαφοραὶ* unc. incl. Essen III, p. 19 || 17. *ἡ* ante *αὐτὴ* dèlendum esse censet Schneider, Rhein. Mus. 1866, p. 448, unc. incl. Rodier || *νόησις*] om. y, quod probat Madvig, p. 473, *φαντασία* margo U, quod probant Susemihl Chaignet, Ess. sur la Psych. d'Ar. p. 445, in

like sensation and hold that we understand, as well as perceive, like by like: as we explained at the outset of the discussion.

This view refuted.

They ought, however, at the same time to have discussed error, a state which is peculiarly characteristic of animal life and in which the soul continues the greater part of its time. It follows from their premisses that either all presentations of the senses must be true, as some affirm, or contact with what is unlike must constitute error; this being the converse of the position that like is known by like. But, as the knowledge of contraries is one and the same, so, too, it would seem, is error with respect to contraries one and the same.

3 Now it is clear that perception and intelligence are not the same thing. For all animals share in the one, but only a few in the other. And when we come to thinking, which includes right thinking and wrong thinking, right thinking being intelligence, knowledge and true opinion, and wrong thinking the opposites of these, neither is this identical with perception. For perception of the objects of the special senses is always true and is found in all animals, while thinking may be false as well as true and is found in none which have not reason also. 4 Imagination, in fact, is something different both from perception and from thought, and is never found by itself apart from perception, any more than is belief apart from imagination. Clearly thinking is not the same thing as believing. For the former is in our own power, whenever we please: for we can represent an object before our eyes, as do those who range things under mnemonic headings and picture them to themselves. But opining is not in our power, for the opinion that we hold must be either false or true. Moreover, when we are of opinion that something is terrible or alarming, we at once feel the corresponding emotion, and so, too, with what is reassuring. But when we are under the influence of imagination we are no more affected than if we saw in a picture the objects which inspire terror or confidence. 5 There are also different forms even of belief; knowledge, opinion, intelligence and their opposites. But the difference between these species must be reserved for another discussion.

textum recepit Biehl in ed. alt., reliqui codd. νόησις, etiam Simpl. Philop. || 19. ἔστι τι E, receperunt Biehl Rodier, om. U, ἔστι τι etiam Soph., τι om. reliqui omnes || 20. ἢ om. S T U W X y, leg. Soph. || 21. δοξάζωμεν L S U W, δοξάσωμεν etiam Philop. Soph. || 22. κἂν] καὶ ἐὰν T y, κἂν ᾖ L, καὶ ἐὰν ᾖ S U V W X Soph., κἂν etiam Them. || 23. εἰ] οἱ T W Bek. Trend. Torst., ὥσπερ ἂν εἰ etiam Simpl. 221, 3 Soph. 118, 32, ὥσπερ θεώμενοι πάσχομεν in paraphr. Them., "sicut si essemus considerantes" vet. transl., εἰ recepit Biehl || 24. ἢ E Simpl. 221, 4 et Soph., reliqui codd. καὶ || εἰσὶ δὲ...26. λόγος ab hoc loco aliena et fort. spuria esse putat Susemihl || καὶ αὐτῆς] αὐτῆς καὶ Essen || 25. καὶ τἀναντία τούτων unc. incl. Essen || 26. τὰ ἐναντία S U V W X || ἔσται X.

περὶ δὲ τοῦ νοεῖν, ἐπεὶ ἕτερον τοῦ αἰσθάνεσθαι,
τούτου δὲ τὸ μὲν φαντασία δοκεῖ εἶναι τὸ δὲ ὑπόληψις,
περὶ φαντασίας διορίσαντας οὕτω περὶ θατέρου λεκτέον.
6 εἰ δή ἐστιν ἡ φαντασία καθ' ἣν λέγομεν φάντασμά τι 428a
ἡμῖν γίγνεσθαι καὶ μὴ εἴ τι κατὰ μεταφορὰν λέγομεν,
μία τίς ἐστι τούτων δύναμις ἢ ἕξις, καθ' ἣν κρίνομεν καὶ
ἀληθεύομεν ἢ ψευδόμεθα. τοιαῦται δ' εἰσὶν αἴσθησις, δόξα,
7 ἐπιστήμη, νοῦς. ὅτι μὲν οὖν οὐκ ἔστιν αἴσθησις, δῆλον ἐκ 5
τῶνδε. αἴσθησις μὲν γὰρ ἤτοι δύναμις ἢ ἐνέργεια, οἷον ὄψις
καὶ ὅρασις, φαίνεται δέ τι καὶ μηδετέρου ὑπάρχοντος τού-
των, οἷον τὰ ἐν τοῖς ὕπνοις. εἶτα αἴσθησις μὲν ἀεὶ πάρεστι,
φαντασία δ' οὔ. εἰ δὲ τῇ ἐνεργείᾳ τὸ αὐτό, πᾶσιν ἂν ἐν-
δέχοιτο τοῖς θηρίοις φαντασίαν ὑπάρχειν· δοκεῖ δ' οὔ, οἷον 10
μύρμηκι ἢ μελίττῃ ἢ σκώληκι. εἶτα αἱ μὲν ἀληθεῖς αἰεί,
αἱ δὲ φαντασίαι γίνονται αἱ πλείους ψευδεῖς. ἔπειτ' οὐδὲ λέ-
γομεν, ὅταν ἐνεργῶμεν ἀκριβῶς περὶ τὸ αἰσθητόν, ὅτι φαί-
νεται τοῦτο ἡμῖν ἄνθρωπος· ἀλλὰ μᾶλλον ὅταν μὴ ἐναρ-
γῶς αἰσθανώμεθα [τότε ἢ ἀληθὴς ἢ ψευδής]. καὶ ὅπερ δὲ 15
8 ἐλέγομεν πρότερον, φαίνεται καὶ μύουσιν ὁράματα. ἀλλὰ
μὴν οὐδὲ τῶν ἀεὶ ἀληθευόντων οὐδεμία ἔσται, οἷον ἐπιστήμη ἢ
νοῦς· ἔστι γὰρ φαντασία καὶ ψευδής. λείπεται ἄρα ἰδεῖν εἰ
δόξα· γίνεται γὰρ δόξα καὶ ἀληθὴς καὶ ψευδής. ἀλλὰ
δόξῃ μὲν ἕπεται πίστις (οὐκ ἐνδέχεται γὰρ δοξάζοντα οἷς 20
δοκεῖ μὴ πιστεύειν), τῶν δὲ θηρίων οὐθενὶ ὑπάρχει πίστις,

27. *τοῦ αἰσθ.* E, sed nunc *υ* eras. (Stapf.), *τοῦ* etiam Simpl. 221, 6 || 428 a, 1. *ἡ* om. W et pr. E, leg. Soph. || 2. *γενέσθαι* S T V X, *ἐγγίνεσθαι* W y Them. 89, 30 || 3. "negatio aut certe dubitatio in hac apodosi desideratur" Trend., ante *μία* addendum esse *ζητῶμεν εἰ* coni. Bywater, p. 56 || *καθ' ἃς* coni. Torst., *καθ' ἣν* etiam Philop. Soph. || *καὶ*] *ἢ* E S U W X, *καὶ* etiam Soph. || 4. *ἢ*] *καὶ* E S T U W, *ἢ* etiam Soph. || *τοιαῦτα* S V y, *ταῦτα* L W X, *τοιαῦται* etiam Them. Philop. || 5. *νοῦς ἐπιστήμη* S T U W X Philop., *ἐπιστήμη νοῦς* etiam Them. Simpl. Soph., *ἐπιστήμην* pr. E sed nunc *ν* eras. (Rr.) || *οὖν* om. S U X, leg. Them. Soph. || 6. *αἴσθησις μὲν*...15. *καὶ ὅπερ*. Hunc locum restituere tentat Essen III, 21 || 6. *μὲν* om. y, leg. Soph. || 7. ante *φαίνεται* aliquid excidisse censet Freudenthal, p. 55 || *τούτων ὑπάρχοντος* S T U V W X Soph. || 8. legendum proponit Torst., Jahrb. f. Phil. 1867, p. 246: *αἴσθησις μὲν ἀεὶ <τοῦ> παρόντος ἐστί, φαντασία δ' οὔ*, quod improbat Freudenthal, qui pro *ἀεὶ* legi vult *πᾶσι* (quod probat Susemihl) et *ὑπάρχει* pro *πάρεστι*, p. 12 et Rhein. Mus. 1869, p. 400, utrique adversatur Schieboldt, De imag. disquis., p. 12, *αἴσθησις μὲν ἡ δυνάμει ἀεὶ πάρεστι* coni. Christ || 11. *σκόληκι* pr. E (Rr.) || Torst., Them. et Soph. secutus, scripsit: *οἷον μύρμηκι μὲν ἢ μελίττῃ, σκώληκι δ' οὔ*, quod etiam Belger in alt. ed. Trend. recepit et, omisso *μὲν*, Rodier, quibus assentitur Schieboldt, p. 9, ac profecto Them. ita legisse videtur,

To turn to thought: since it is different from sense-perception and seems to include imagination on the one hand and conception on the other, we must determine the nature of imagination before we proceed to discuss conception. If, then, imagination is the faculty in virtue of which we say that an image presents itself to us, and if we exclude the metaphorical use of the term, it is some one of the faculties or habits in virtue of which we judge, and judge truly or falsely. Such faculties or habits are sensation, opinion, knowledge, intellect. It is clearly not sensation, for the following reasons. Sensation is either a faculty like sight or an activity like seeing. But we may have an image even when neither the one nor the other is present: for example, the images in dreams. Again, sensation is always present, but not so imagination. Besides, the identity of the two in actuality would involve the possibility that all the brutes have imagination. But this apparently is not the case; for example, the ant, the bee and the grub do not possess it. Moreover, sensations are always true, but imaginings prove for the most part false. Further, it is not when we direct our energies closely to the sensible object, that we say that this object appears to us to be a man, but rather when we do not distinctly perceive it [*then the term true or false is applied*]. And, as we said before, visions present themselves even if we have our eyes closed.

Imagination.

6

Not sensation.

7

Neither, again, can imagination be ranked with the faculties, like knowledge or intellect, which always judge truly: it may also be false. It remains, then, to consider whether it be opinion, as opinion may be true or false. But opinion is attended by conviction, for it is impossible to hold opinions without being convinced of them: but no brute is ever convinced,

8

nor opinion,

quamquam suspicionem movet vocabulum ἴσως, quod addidit 90, 8, et fort. Alex., qui scribit De An. 67, 2: καὶ αἰσθήσεως μὲν πάντα μετέχει τὰ ζῷα, φαντασίας δὲ οὐ δοκεῖ, ὡς τά τε ὀστρεώδη τῶν θαλασσίων καὶ οἱ σκώληκες, et Soph. alieno loco, p. 55, 27, haec verba habet: μύρμηξι καὶ μελίτταις καὶ τοῖς ὁμοίοις...ἀνάγκη παρεῖναι φαντασίαν..., σκώληκες δὲ καὶ μυῖαι...ἢ οὐ δοκοῦσιν ὅλως ἔχειν ἢ ἀμυδράν τινα, similiter Philop. ad 413 b, 22. et ad 414 b, 33. (258, 32), hoc vero loco diserte vulgatam lectionem agnoscit et interpretatur, quare neque ex Philop. neque ex Soph. lectionem a Torst. receptam confirmari posse iudicat Biehl; vulgatam tuentur praeter omnes codd. etiam Simpl. hoc loco et p. 308, 19 et vet. transl. et Barco, p. 62; cf. ad hunc locum 434 a, 4 || 12. ἔπειτ'] ἔτι T et corr. E, ἔπειτα leg. etiam Soph. || 14. ἐνεργῶς E, ἐναργῶς etiam Them. Soph. || 15. ἢ] om. pr. E, καὶ U, καὶ ἢ T y, καὶ ἡ S V || ἢ] καὶ ἡ S V || τότε ἢ ἀλ. ἢ ψ. unc. inclusit Torst., quod probat etiam Madvig, leg. Soph. et vet. transl. || δὴ S T U V X y Soph. Bywater, p. 56 || 19. ἀλλὰ...24. δ' οὔ e duab. ed. contam. iudicat Torst., cui assentitur Freudenthal, Rhein. Mus. 1869, p. 405, pr. 22. ἔτι πάσῃ...24. δ' οὔ, post. 19. ἀλλὰ...22. πολλοῖς || 21. δοκεῖ] δοξάζει L U W Philop. 500, 20, δοκεῖ etiam Them. Soph.

φαντασία δ' ἐν πολλοῖς. ἔτι πάσῃ μὲν δόξῃ ἀκολουθεῖ πίστις,
πίστει δὲ τὸ πεπεῖσθαι, πειθοῖ δὲ λόγος· τῶν δὲ θηρίων
9 ἐνίοις φαντασία μὲν ὑπάρχει, λόγος δ' οὔ. φανερὸν τοίνυν
ὅτι οὐδὲ δόξα μετ' αἰσθήσεως οὐδὲ δι' αἰσθήσεως, οὐδὲ συμ-
πλοκὴ δόξης καὶ αἰσθήσεως φαντασία ἂν εἴη, διά τε
ταῦτα καὶ δῆλον ὅτι οὐκ ἄλλου τινός ἐστιν ἡ δόξα, ἀλλ'
ἐκείνου ἐστὶν οὗ καὶ ἡ αἴσθησις· λέγω δ', ἐκ τῆς τοῦ λευκοῦ δό-
ξης καὶ αἰσθήσεως ἡ συμπλοκὴ φαντασία ἐστίν· οὐ γὰρ δὴ
ἐκ τῆς δόξης μὲν τῆς τοῦ ἀγαθοῦ, αἰσθήσεως δὲ τῆς τοῦ
λευκοῦ· τὸ οὖν φαίνεσθαί ἐστι τὸ δοξάζειν ὅπερ αἰσθάνεται 428b
10 μὴ κατὰ συμβεβηκός. φαίνεται δὲ καὶ ψευδῆ, περὶ ὧν
ἅμα ὑπόληψιν ἀληθῆ ἔχει, οἷον φαίνεται μὲν ὁ ἥλιος πο-
διαῖος, πεπίστευται δ' εἶναι μείζων τῆς οἰκουμένης· συμβαί-
νει οὖν ἤτοι ἀποβεβληκέναι τὴν ἑαυτοῦ ἀληθῆ δόξαν, ἣν εἶχε, 5
σωζομένου τοῦ πράγματος, μὴ ἐπιλαθόμενον μηδὲ μεταπει-
σθέντα, ἢ εἰ ἔτι ἔχει, ἀνάγκη τὴν αὐτὴν ἀληθῆ εἶναι καὶ
ψευδῆ. ἀλλὰ ψευδὴς ἐγίνετο, ὅτε λάθοι μεταπεσὸν τὸ
πρᾶγμα. οὔτ' ἄρα ἕν τι τούτων ἐστὶν οὔτ' ἐκ τούτων ἡ φαντασία.

11 ἀλλ' ἐπειδή ἐστι κινηθέντος τουδὶ κινεῖσθαι ἕτερον ὑπὸ 10
τούτου, ἡ δὲ φαντασία κίνησίς τις δοκεῖ εἶναι καὶ οὐκ ἄνευ
αἰσθήσεως γίγνεσθαι ἀλλ' αἰσθανομένοις καὶ ὧν αἴσθησίς
ἐστιν, ἔστι δὲ γίνεσθαι κίνησιν ὑπὸ τῆς ἐνεργείας τῆς αἰσθή-
σεως, καὶ ταύτην ὁμοίαν ἀνάγκη εἶναι τῇ αἰσθήσει, εἴη ἂν
αὕτη ἡ κίνησις οὔτε ἄνευ αἰσθήσεως ἐνδεχομένη οὔτε μὴ αἰ- 15
σθανομένοις ὑπάρχειν, καὶ πολλὰ κατ' αὐτὴν καὶ ποιεῖν
καὶ πάσχειν τὸ ἔχον, καὶ εἶναι καὶ ἀληθῆ καὶ ψευδῆ.

22. δ' ἐν E L, δὲ ἐν Soph., ἐν om. reliqui ante Biehlium omnes ‖ verba ἔτι ... 24. δ' οὔ unc. incluserunt Biehl ‖ πάσῃ] εἰ πάσῃ S X y, εἰ insert. E_2 (Bhl.) ‖ 26. ἡ φαντ. coni. Torst. ‖ virgulam post εἴη delevit, post 27. ταῦτα posuit Rodier, Simpl. 212, 12. 28 Philop. 504, 31 et Them. 90, 31 secutus. Idem Rodier dubitanter διά γε ταῦτα coni. ‖ διά τε ταῦτα ... 28. αἴσθησις ante 24. φανερὸν poni vult G. Schneider, Rhein. Mus. 1866, p. 449 ‖ 27. καὶ ὅτι (omisso δῆλον) vel καὶ ὅτι δῆλον ὅτι et ἔσται pro ἐστιν coni. Shorey, p. 150 ‖ ἄλλη τις S T V W, ἄλλης y, ἄλλου etiam Them. Simpl. Soph. ‖ ἡ om. S V X ‖ 28. ἐκείνη S T, ἐκείνης y, ἡ ἐκείνη Philop. ‖ ἐστιν] ἥπερ ἐστὶν S, ἥσπερ ἐστιν y, εἴπερ ἐστὶν T W Torst., vulgatam tuetur vet. transl. ‖ οὗ καὶ ἡ] οὗ καὶ E L Bek. Trend., καὶ ἡ y, οὗπερ ἐστι καὶ ἡ U V, οὗ καὶ ἡ S T W X, scripsit Torst., οὗπερ ἐστιν, ὁμοῦ καὶ ἡ Simpl. ‖ ἐκ] εἰ V Trend. G. Schneider, ὅτε ἐκ y, vulgatam tuetur vet. transl. ‖ 29. ἡ συμπλοκή unc. incl. Torst. ‖ 428 b, 1. ἔσται coni. Trend., scripsit Torst., cui assentitur G. Schneider, ἐστι etiam Philop. et vet. transl. ‖ 2. δὲ] δέ γε S T U V W X y, fort. recte, iudice Biehlio ‖ 3. ἔχειν E S ‖ ποδιαῖος pr. E ‖ 4. πέπεισται S T U X Torst., πιστεύεται L ‖ μείζων L U W X Bek. Trend., μείζω E S T V y Torst. Biehl Rodier ‖ 5. αὐτοῦ E L ‖ ἀληθῆ post εἶχεν S U W X ‖

though many have imagination. Further, every opinion implies conviction, conviction implies that we have been persuaded, and persuasion implies reason. Among brutes, however, though some have imagination, none have reason. It is evident, then, that 9 imagination is neither opinion joined with sensation nor opinion through sensation, nor yet a complex of opinion and sensation, both on these grounds and because nothing else is the object of opinion but that which is the object of sensation: I mean, it is the complex of the opinion of white and the sensation of white, not surely of the opinion of good with the sensation of white, which alone could constitute imagination. To imagine, then, will be on this supposition to opine directly, not indirectly, that which we perceive. But there are false imagin- 10 ings concerning things of which we hold at the same time a true conception. For example, the sun appears only a foot in diameter, but we are convinced that it is larger than the inhabited world: in this case, therefore, either, without any alteration in the thing and without any lapse of memory on our part or conversion by argument, we have abandoned the true opinion which we had about it; or else, if we still retain it, the same opinion must be both true and false. It could have proved false only in the event of the object having changed without our observing it. It is not, then, either one of the two, opinion and sensation, singly, or a combination of the two, which constitutes imagination.

nor opinion combined with sensation.

Now when one thing is moved, something else can be moved 11 by it. And imagination is thought to be a species of motion and not to arise apart from sensation, but only in sentient beings and with the objects of sense for its objects. Motion, again, may be produced by actual sensation, and such motion must resemble the sensation which caused it. From all this it follows that this particular motion cannot arise apart from sensation nor be found anywhere except in sentient beings: and in virtue of this motion it is possible for its possessor to do and experience many things: imagination, too, may be both true and

It is a movement subsidiary to sensation.

6. *ἐπιλανθανόμενον* L T U V W X || 7. *τὴν αὐτὴν* om. pr. E, ante *ἀνάγκη* ponunt L W y || post *εἶναι* addendum *πιστεύειν* censet Essen III, p. 23 || 8. *ἐγίνετο* E, sed in litura (Trend.), L S U V X y Torst., *ἐγένετο* reliqui ante Torst. omnes, etiam Susemihl, B. J. XXX, 47 || *ἀλλὰ*...9. *πρᾶγμα* Torst. suspecta sunt, non legisse videntur Them. Simpl. Soph., leg. etiam Philop. || 9. *οὐκ ἄρα* E L T W y || 10. *τοῦδε* S U V y || 11. ad verba *ἡ δὲ*... 12. *αἴσθησίς ἐστιν* annotat Torst.: vereor ne, etsi sunt Aristotelis, in posteriore edit. non fuerint scripta, leg. etiam Simpl. Philop. || 12. *αἰσθήσεις εἰσὶν* T U V W et, omisso verbo, S, numerum singularem *αἴσθησις* leg. etiam Philop. 512, 24 Simpl. 215, 3 Soph. 119, 34 || 15. *αὐτῆς* E || 16. *ὑπάρχει* E || *κατὰ ταύτην* E L, *κατ' αὐτὴν* etiam Them. Simpl. Philop. Soph. || *καὶ* om. T V X y, tuentur etiam Them. Soph.

12 τοῦτο δὲ συμβαίνει διὰ τάδε. ἡ αἴσθησις τῶν μὲν ἰδίων ἀληθής ἐστιν ἢ ὅτι ὀλίγιστον ἔχουσα τὸ ψεῦδος. δεύτερον δὲ τοῦ συμβεβηκέναι ταῦτα· καὶ ἐνταῦθα ἤδη ἐνδέχεται διαψεύ- 20 δεσθαι· ὅτι μὲν γὰρ λευκόν, οὐ ψεύδεται, εἰ δὲ τοῦτο τὸ λευκὸν ἢ ἄλλο τι, ψεύδεται. τρίτον δὲ τῶν κοινῶν καὶ ἑπομένων τοῖς συμβεβηκόσιν, οἷς ὑπάρχει τὰ ἴδια· λέγω δ' οἷον κίνησις καὶ μέγεθος, ἃ συμβέβηκε τοῖς αἰσθητοῖς, περὶ ἃ 13 μάλιστα ἤδη ἔστιν ἀπατηθῆναι κατὰ τὴν αἴσθησιν. ἡ δὲ κί- 25 νησις ἡ ὑπὸ τῆς ἐνεργείας γινομένη διοίσει [τῆς αἰσθήσεως] ἡ ἀπὸ τούτων τῶν τριῶν αἰσθήσεων. καὶ ἡ μὲν πρώτη παρούσης τῆς αἰσθήσεως ἀληθής, αἱ δ' ἕτεραι καὶ παρούσης καὶ ἀπούσης εἶεν ἂν ψευδεῖς, καὶ μάλιστα ὅταν πόρρω τὸ αἰσθητὸν ᾖ. εἰ οὖν μηθὲν μὲν ἄλλο ἔχοι ἢ τὰ εἰρημένα ἡ φαν- 30 τασία, τοῦτο δ' ἐστὶ τὸ λεχθέν, ἡ φαντασία ἂν εἴη κίνησις 429a 14 ὑπὸ τῆς αἰσθήσεως τῆς κατ' ἐνέργειαν γιγνομένη. ἐπεὶ δ' ἡ ὄψις μάλιστα αἴσθησίς ἐστι, καὶ τὸ ὄνομα ἀπὸ τοῦ φάους εἴ- 15 ληφεν, ὅτι ἄνευ φωτὸς οὐκ ἔστιν ἰδεῖν. καὶ διὰ τὸ ἐμμένειν καὶ ὁμοίας εἶναι ταῖς αἰσθήσεσι, πολλὰ κατ' αὐτὰς πράτ- 5 τει τὰ ζῷα, τὰ μὲν διὰ τὸ μὴ ἔχειν νοῦν, οἷον τὰ θηρία, τὰ δὲ διὰ τὸ ἐπικαλύπτεσθαι τὸν νοῦν ἐνίοτε πάθει ἢ νόσοις ἢ ὕπνῳ, οἷον οἱ ἄνθρωποι. περὶ μὲν οὖν φαντασίας, τί ἐστι καὶ διὰ τί ἐστιν, εἰρήσθω ἐπὶ τοσοῦτον.

19. *τῷ συμβεβηκέναι ταῦτα* E (recte Bus., sed *τῷ* sine ι adscript.), *τοῦ συμβεβηκότος* X, *τοῦ ᾧ συμβέβηκε καὶ ταῦτα* Ald. Sylb. Basil. et vet. transl., Them. interpretatur: *δεύτερον δὲ τῶν ὑποκειμένων τοῖς ἰδίοις καὶ οἷς ἐκεῖνα συμβέβηκε*, ex Simpl. et Philop. interpr. colligit Biehl, eos legisse aut *τοῦ συμβεβηκότος* aut *τοῦ ὃ συμβέβηκε τούτοις*, quod scriptum esse ab Arist. coni. Torst., pro *ταῦτα* coni. *τούτῳ* Steinhart, fort. legendum *ταῦτα τούτῳ* censet Rodier || 20. v. ad b, 24 || *διαψεύσασθαι* E, *διαψεύδεσθαι* etiam Them. || 21. *τὸ* om. E S V X, leg. Philop. || 22. *τι* et 24. *ἃ* ante *συμβ.* om. S T U V W X || 23. *τοῖς...ἴδια* unc. incl. Essen III, p. 25, *οἷς...ἴδια* delenda censet Maier, Syllogistik des Arist., p. 9 in adn., Simpl. et Philop. videntur legisse *καὶ τὰ ἴδια*, fort. *οἷς...τὰ ἴδια* non leg. Them. || 24. *ἃ...αἰσθητοῖς* unc. inclusit Torst., post 20. *ταῦτα* transponenda censet Bywater, p. 58, cui assentitur Susemihl, B. J. LXVII, 109, in parenth. posuit Rodier || 25. *δὲ*] *δὴ* T U Rodier, *δ' ἡ* W || 26. *τῶν αἰσθήσεων* T, *τῆς αἰσθήσεως* unc. inclusit Torst., fort. transponendum esse post *ἐνεργείας* putat Biehl, et iam idem G. Schneider suaserat; etiam facilius post *γινομένη* traici posse censet Susemihl, Oecon. p. 86 || 27. *ἡ...αἰσθήσεων* om. S U V W, leg. etiam Philop., pro *ἡ* sine ullo cod. scripserunt *τῆς* Bek. et Trend., *ᾗ* coni. Christ, *ἡ* delendum censet G. Schneider, Zeitschr. f. Gym. 1867, p. 631 || 29. *αἰσθητήριον* T U V W X || 30. *μὲν* om. S T U V W X Philop. || *ἔχοι ἢ* E, recepit Biehl, *ἔχοι* L y et Philop. cod. D, *ἔχει*, omisso *ἢ*, reliqui omnes, etiam Torst. Zeller Rodier || Nescio an *ἢ τὰ εἰρημένα* unc. includenda sint, nisi forte, deserto cod. E, totus locus ita est purgandus: *εἰ οὖν μηθὲν ἄλλο ἔχει τὰ εἰρημένα [ἡ φαντασία, τοῦτο δ' ἐστὶ τὸ λεχθέν], ἡ φαντασία ἂν εἴη κτέ.* ||

false. The reasons for the last conclusion are as follows. Perception 12 of the objects of the special senses is true, or subject to the minimum of error. Next comes the perception that they are attributes: and at this point error may come in. As to the whiteness of an object sense is never mistaken, but it may be mistaken as to whether the white object is this thing or something else. Thirdly, there is perception of the common attributes, that is, the concomitants of the things to which the special attributes belong: I mean, for example, motion and magnitude, which are attributes of sensibles. And it is concerning them that sense is most apt to be deceived. But the motion which is the result of actual 13 sensation will be different according as it arises from one or other of these three kinds of perception. The first kind, so long as the sensation is present, is true: the other kinds may be false, whether the sensation is present or absent, and especially when the object perceived is a long way off. If then, imagination possesses no other characteristics than the aforesaid, and if it is what it has been described to be, imagination will be a motion generated by actual perception. And, since sight is the 14 principal sense, imagination has derived even its name (*φαντασία*) from light (*φάος*), because without light one cannot see. Again, 15 because imaginations remain in us and resemble the corresponding sensations, animals perform many actions under their influence; some, that is, the brutes, through not having intellect, and others, that is, men, because intellect is sometimes obscured by passion or disease or sleep. Let this account of the nature and cause of imagination suffice.

Imagination defined.

ἡ] solus E, ἦ L S T U V X y, ἦ ἡ W Rodier, "si igitur nihil aliud habet ea quae dicta sunt quam phantasia" vet. transl., ἦ μὴ Bek. Trend., secuti edit. Sylburgianam, vel potius eiusdem typothetarum errorem, ἦ ἡ φαντασία unc. incl. Torst., non legisse Philop. 514, 32 idem Torst. censet || φαντασίαν S Bek. Trend.; scriptum fuisse ab Arist.: εἰ οὖν μηθὲν μὲν ἄλλο ἔχει τὰ εἰρημένα, τοῦτο δ' ἔχει, ἡ φαντασία ἂν εἴη κίνησις coni. Torst. || 429a, 1. τοῦτο δ' ἐστι Biehl, etiam Them. 93, 22 || ταὐτὸ δ' ἐστὶ sive ταὐτὸ δ' ἔχει coni. Christ || 2. γιγνομένη pr. E (Trend.) L y Them. Philop. Simpl. vet. transl. Trend. Torst., quod etiam probat Zeller, p. 545, γιγνομένης reliqui codd., etiam Bek. || 3. ἐστι om. S T U V W X || 5. ὁμοίας E, sed ας in rasura (Bhl.), T U X Them. Simpl. vet. transl. Torst., ὁμοίως reliqui ante Torst. omnes || κατὰ ταύτας E L y, κατ' αὐτὰς etiam Them. Simpl. || πράττειν E || 7. νόσω T U V, νόσοις etiam Them. Simpl. 221, 12 || 9. διότι E Soph. 121, 20.

4 Περὶ δὲ τοῦ μορίου τοῦ τῆς ψυχῆς ᾧ γινώσκει τε ἡ 10
ψυχὴ καὶ φρονεῖ, εἴτε χωριστοῦ ὄντος εἴτε καὶ μὴ χωριστοῦ
κατὰ μέγεθος ἀλλὰ κατὰ λόγον, σκεπτέον τίν' ἔχει δια-
2 φοράν, καὶ πῶς ποτὲ γίνεται τὸ νοεῖν. εἰ δή ἐστι τὸ νοεῖν
ὥσπερ τὸ αἰσθάνεσθαι, ἢ πάσχειν τι ἂν εἴη ὑπὸ τοῦ νοητοῦ ἤ
3 τι τοιοῦτον ἕτερον. ἀπαθὲς ἄρα δεῖ εἶναι, δεκτικὸν δὲ τοῦ εἴ- 15
δους καὶ δυνάμει τοιοῦτον ἀλλὰ μὴ τοῦτο, καὶ ὁμοίως ἔχειν,
ὥσπερ τὸ αἰσθητικὸν πρὸς τὰ αἰσθητά, οὕτω τὸν νοῦν πρὸς
τὰ νοητά. ἀνάγκη ἄρα, ἐπεὶ πάντα νοεῖ, ἀμιγῆ εἶναι, ὥσ-
περ φησὶν Ἀναξαγόρας, ἵνα κρατῇ, τοῦτο δ' ἐστὶν ἵνα γνω-
ρίζῃ· παρεμφαινόμενον γὰρ κωλύει τὸ ἀλλότριον καὶ ἀντι- 20
φράττει· ὥστε μηδ' αὐτοῦ εἶναι φύσιν μηδεμίαν ἀλλ' ἢ
ταύτην, ὅτι δυνατόν. ὁ ἄρα καλούμενος τῆς ψυχῆς νοῦς
(λέγω δὲ νοῦν ᾧ διανοεῖται καὶ ὑπολαμβάνει ἡ ψυχή)
4 οὐθέν ἐστιν ἐνεργείᾳ τῶν ὄντων πρὶν νοεῖν. διὸ οὐδὲ μεμεῖχθαι
εὔλογον αὐτὸν τῷ σώματι· ποιός τις γὰρ ἂν γίγνοιτο, ἢ ψυ- 25
χρὸς ἢ θερμός, ἢ κἂν ὄργανόν τι εἴη, ὥσπερ τῷ αἰσθητικῷ·
νῦν δ' οὐθέν ἐστιν. καὶ εὖ δὴ οἱ λέγοντες τὴν ψυχὴν εἶναι τό-
πον εἰδῶν, πλὴν ὅτι οὔτε ὅλη ἀλλ' ἡ νοητική, οὔτε ἐντελε-
5 χείᾳ ἀλλὰ δυνάμει τὰ εἴδη. ὅτι δ' οὐχ ὁμοία ἡ ἀπάθεια
τοῦ αἰσθητικοῦ καὶ τοῦ νοητικοῦ, φανερὸν ἐπὶ τῶν αἰσθητηρίων 30
καὶ τῆς αἰσθήσεως. ἡ μὲν γὰρ αἴσθησις οὐ δύναται αἰσθάνε-
σθαι ἐκ τοῦ σφόδρα αἰσθητοῦ, οἷον ψόφου ἐκ τῶν μεγάλων 429b
ψόφων, οὐδ' ἐκ τῶν ἰσχυρῶν χρωμάτων καὶ ὀσμῶν οὔτε
ὁρᾶν οὔτε ὀσμᾶσθαι· ἀλλ' ὁ νοῦς ὅταν τι νοήσῃ σφόδρα νοη-
τόν, οὐχ ἧττον νοεῖ τὰ ὑποδεέστερα, ἀλλὰ καὶ μᾶλλον· τὸ
6 μὲν γὰρ αἰσθητικὸν οὐκ ἄνευ σώματος, ὁ δὲ χωριστός. ὅταν 5
δ' οὕτως ἕκαστα γένηται ὡς ὁ ἐπιστήμων λέγεται ὁ κατ' ἐνέρ-
γειαν (τοῦτο δὲ συμβαίνει, ὅταν δύνηται ἐνεργεῖν δι' αὐτοῦ),

10. τοῦ ante τῆς om. L S T U W X Philop., τοῦ τῆς ψυχ. μορίου y, leg. τοῦ Them. || 11. καὶ post εἴτε om. E (Bus.) et Simpl. || 14. τι] ὅτι E L, τι leg. Philop. Soph. Simpl., hoc loco et p. 264, 17 || 15. ἄρα tuentur omnes codd. et Them. Simpl. Philop. || 18. ἀνάγκη... 27. οὐθέν ἐστιν e duab. rec. contam. iudicat Torst., pr. 22. ὁ ἄρα...27. ἐστιν, post. 18. ἀνάγκη...22. δυνατόν, quod negant Noetel, Ztschr. f. Gymn. 1864, p. 140 et Dittenberger, Götting. gelehrte Anzeigen 1863, p. 1610 || 18. ἐπειδὴ S U V W X y Them. || 20. κωλύσει coni. Essen, Beitr. z. Lös., p. 44, scripsit H. Jackson, Texts to illustrate, p. 93 || ἀντιφράζει S V X, ἀντιφράξει U W y Essen H. Jackson, ἀντιφράττει leg. etiam Soph. || 25. γὰρ ἄν τις L S T U V W X, ποιός τις ἂν γίγνοιτο Soph. || ἢ ψ. ἢ θ. E, θ. ἢ ψ. S T U V W X Philop., ἢ θ. ἢ ψ. y, ψυχρὸς ἢ θερμός Soph. Bek. Trend. Torst. ||

Intellect or Mind.

As to the part of the soul with which it knows and understands, whether such part be separable spatially, or not separable spatially, but only in thought, we have to consider what is its distinctive character and how thinking comes about. Now, if thinking is analogous to perceiving, it will consist in a being acted upon by the object of thought or in something else of this kind. This part of the soul, then, must be impassive, but receptive of the form and potentially like this form, though not identical with it: and, as the faculty of sense is to sensible objects, so must intellect be related to intelligible objects. The mind, then, since it thinks all things, must needs, in the words of Anaxagoras, be unmixed with any, if it is to rule, that is, to know. For by intruding its own form it hinders and obstructs that which is alien to it; hence it has no other nature than this, that it is a capacity. Thus, then, the part of the soul which we call intellect (and by intellect I mean that whereby the soul thinks and conceives) is nothing at all actually before it thinks. Hence, too, we cannot reasonably conceive it to be mixed with the body: for in that case it would acquire some particular quality, cold or heat, or would even have some organ, as the perceptive faculty has. But as a matter of fact it has none. Therefore it has been well said that the soul is a place of forms or ideas: except that this is not true of the whole soul, but only of the soul which can think, and again that the forms are there not in actuality, but potentially. But that the impassivity of sense is different from that of intellect is clear if we look at the sense-organs and at sense. The sense loses its power to perceive, if the sensible object has been too intense: thus it cannot hear sound after very loud noises, and after too powerful colours and odours it can neither see nor smell. But the intellect, when it has been thinking on an object of intense thought, is not less, but even more, able to think of inferior objects. For the perceptive faculty is not independent of body, whereas intellect is separable. But when the intellect has thus become everything in the sense in which one who actually is a scholar is said to be so (which happens so soon as he can exercise his power of himself), even

4 2 3

A potentiality: "the place of forms."

4 5 6

In habitu.

26. ἢ κἂν] καὶ κἂν S, κἂν T W Soph. Susemihl, Oecon. p. 86, καὶ U V X || 29. ὅτι δ ...30. νοητικοῦ unc. incl. Essen III, p. 38 || 429 b, 1. οἷον τοῦ ψ. S T V X y, οἷον ἐκ τοῦ ψ. E, ἐκ τοῦ ψόφου τοῦ μεγάλου [ἢ] τῶν μικρῶν ψόφων Them. 104, 34 || ἐκ om. E, οἷον ψόφου ἐκ τῶν μεγ. ψ. etiam Soph. || 4. verba ἀλλὰ καὶ μᾶλλον interpolata esse censet Torst., Jahrb. f. Phil. 1867, p. 246, leg. etiam Them. || 5. ὁ δὲ νοῦς χωρ. y et in interpr. Soph., om. νοῦς etiam Them. 105, 4 || 6. ὁ post ὡς om. S W Theoph. ap. Prisc. 31, 8 Bek. Trend. || ὁ ante κατ' om. S U V W X Theoph. ap. Prisc. 31, 9.

ἔστι μὲν καὶ τότε δυνάμει πως, οὐ μὴν ὁμοίως καὶ πρὶν μαθεῖν ἢ εὑρεῖν· καὶ αὐτὸς δὲ αὑτὸν τότε δύναται νοεῖν.

7 ἐπεὶ δ' ἄλλο ἐστὶ τὸ μέγεθος καὶ τὸ μεγέθει εἶναι καὶ 10 ὕδωρ καὶ ὕδατι εἶναι (οὕτω δὲ καὶ ἐφ' ἑτέρων πολλῶν, ἀλλ' οὐκ ἐπὶ πάντων· ἐπ' ἐνίων γὰρ ταὐτόν ἐστι), τὸ σαρκὶ εἶναι καὶ σάρκα [καὶ] ἢ ἄλλῳ ἢ ἄλλως ἔχοντι κρίνει· ἡ γὰρ σὰρξ οὐκ ἄνευ τῆς ὕλης, ἀλλ' ὥσπερ τὸ σιμόν, τόδε ἐν τῷδε. τῷ μὲν οὖν αἰσθητικῷ τὸ θερμὸν καὶ τὸ ψυχρὸν κρίνει, καὶ ὧν 15 λόγος τις ἡ σάρξ· ἄλλῳ δὲ ἤτοι χωριστῷ ἢ ὡς ἡ κεκλασμένη ἔχει πρὸς αὑτὴν ὅταν ἐκταθῇ, τὸ σαρκὶ εἶναι κρίνει. 8 πάλιν δ' ἐπὶ τῶν ἐν ἀφαιρέσει ὄντων τὸ εὐθὺ ὡς τὸ σιμόν· μετὰ συνεχοῦς γάρ· τὸ δὲ τί ἦν εἶναι, εἰ ἔστιν ἕτερον τὸ εὐθεῖ εἶναι καὶ τὸ εὐθύ, ἄλλο· ἔστω γὰρ δυάς. ἑτέρῳ 20 ἄρα ἢ ἑτέρως ἔχοντι κρίνει. καὶ ὅλως ἄρα ὡς χωριστὰ τὰ 9 πράγματα τῆς ὕλης, οὕτω καὶ τὰ περὶ τὸν νοῦν. ἀπορήσειε δ' ἄν τις, εἰ ὁ νοῦς ἁπλοῦν ἐστὶ καὶ ἀπαθὲς καὶ μηθενὶ μηθὲν ἔχει κοινόν, ὥσπερ φησὶν Ἀναξαγόρας, πῶς νοήσει, εἰ τὸ νοεῖν πάσχειν τί ἐστιν. ᾗ γάρ τι κοινὸν ἀμφοῖν ὑπάρχει, τὸ 25 10 μὲν ποιεῖν δοκεῖ τὸ δὲ πάσχειν. ἔτι δ' εἰ νοητὸς καὶ αὐτός. ἢ γὰρ τοῖς ἄλλοις νοῦς ὑπάρξει, εἰ μὴ κατ' ἄλλο αὐτὸς νοητός, ἓν δέ τι τὸ νοητὸν εἴδει, ἢ μεμειγμένον τι ἕξει, ὃ 11 ποιεῖ νοητὸν αὐτὸν ὥσπερ τἆλλα. ἢ τὸ μὲν πάσχειν κατὰ

8. μὲν] μὲν οὖν L W Theoph. l. l. 31, 10 Them. || καὶ τότε E m. pr. y Them. Philop. Torst., καὶ τότε ὁμοίως insert. E_2 (Rr.), ὁμοίως καὶ τότε reliqui ante Torst. omnes || ὁμοίως om. S U X, leg. Them. Simpl. Theoph. l. l. 31, 11 || 9. ἢ] καὶ Theoph. l. l. || δὲ αὑτὸν] δι' αὑτοῦ coni. Bywater, J. of Philol. XIV, p. 40, cui assentitur Susemihl, Oecon., p. 86 || 11. καὶ τὸ ὕδατι E, sed τὸ expunct. (Stapf.), τὸ om. reliqui omnes || οὕτω δὲ...12. ταὐτόν ἐστι in parenth. Bon., Stud. Arist. IV, 376 || 11. οὕτω δὲ om. L T, leg. Them. || 12. ταὐτό E (Trend.) || colon post ἐστι omissum post 13. σάρκα ponit Bek., corr. Trend., iam Them. hunc locum recte interpretatus est 96, 6 sqq. || 13. καὶ ἢ ἄλλῳ solus E, receperunt Biehl Rodier, καὶ ἄλλῳ y, ἢ ἄλλῳ, omisso καὶ, reliqui || ἔχοντι om. L S U V, leg. Them. Simpl. Philop. Soph. et insert. E_2 || κρίνει ὁ νοῦς L et E, sed ὁ νοῦς exp. (Bhl.) || 14. virgulam post σιμόν a Bek. Trend. omissam ponunt Torst. Bon. || 15. αἰσθητῷ pro αἰσθητικῷ legi vult Brentano, p. 134 || τὸ ante ψυχρ. om. E L || 16. ὁ λόγος E, ὁ om. etiam Simpl. Philop. || 17. αὐτὴν y et E (Trend.) || εἶναι καὶ κρίνει L S, καὶ om. etiam Simpl. || 19. εἰ...20. εὐθύ unc. incl. Essen III, 40 || 20. virgulam post εὐθύ om. Bek., corr. Trend. || ἄλλο T V X et Bon. l. l., ἄλλῳ reliqui ante Bon. omnes, quod defendere studet Torst., Jahrb. f. Phil. 1867, p. 245 || 21. καὶ om. L S T U V X et, ut videtur, Philop. 532, 12 || ἄρα om. pr. E, leg. etiam Philop. || 23. ἀπαθὴς pr. E (Bus.), verba καὶ ἀπαθὲς in interpr. ignorare videtur Them. 97, 8 sq., delenda esse censet Hayduck, progr. Gryphisv. 1873, p. 4, cui assentitur Susemihl, Phil. Anzeig. 1873, p. 683, pro ἀπαθὲς coni. ἀμιγὲς Zeller, p. 568 || 24. ἔχων

then it is still in one sense but a capacity: not, however, a capacity in the same sense as before it learned or discovered. And, moreover, at this stage intellect is capable of thinking itself.

How the form or quiddity is apprehended.

Now, since magnitude is not the same as the quiddity of 7 magnitude, nor water the same as the quiddity of water (and so also of many other things, though not of all, the thing and its quiddity being in some cases the same), we judge the quiddity of flesh and flesh itself either with different instruments or with the same instrument in different relations. For flesh is never found apart from matter, but, like "snub-nosed," it is a particular form in a particular matter. It is, then, with the faculty of sense that we discriminate heat and cold and all those qualities of which flesh is a certain proportion. But it is with another faculty, either separate from sense, or related to it as the bent line when it is straightened out is related to its former self, that we discriminate the quiddity of flesh. Again, when we come 8 to the abstractions of mathematics, the straight answers to the quality "snub-nosed," being never found apart from extension. But the straightness of that which is straight, always supposing that the straight is not the same as straightness, is something distinct: we may, for instance, assume the definition of straightness to be duality. It is, then, with another instrument or with the same instrument in another relation that we judge it. In general, therefore, to the separation of the things from their matter corresponds a difference in the operations of the intellect.

Some difficulties considered.

The question might arise: assuming that the mind is something 9 simple and impassive and, in the words of Anaxagoras, has nothing in common with anything else, how will it think, if to think is to be acted upon? For it is in so far as two things have something in common that the one of them is supposed to act and the other to be acted upon. Again, 10 can mind itself be its own object? For then either its other objects will have mind in them, if it is not through something else, but in itself, that mind is capable of being thought, and if to be so capable is everywhere specifically one and the same; or else the mind will have some ingredient in its composition which makes it, like the rest, an object of thought. Or shall we recall our old distinction between 11 two meanings of the phrase "to be acted upon in virtue of a

S U V || νοήσειεν T V X || 26. δ' om. pr. E || 27. ὁ νοῦς S T U W X Philop. Bek. Trend. Torst. || 29. de verbis ἢ...31. νοῇ vide Torst., cui mutila et corrupta videntur; tuetur etiam Simpl., defendit Brentano, p. 137.

κοινόν τι διῄρηται πρότερον, ὅτι δυνάμει πώς ἐστι τὰ νοητὰ 30
ὁ νοῦς, ἀλλ' ἐντελεχείᾳ οὐδέν, πρὶν ἂν νοῇ· δ<υνάμ>ει δ' οὕτως
ὥσπερ ἐν γραμματείῳ ᾧ μηθὲν ὑπάρχει ἐντελεχείᾳ γεγραμ- 430a
12 *μένον· ὅπερ συμβαίνει ἐπὶ τοῦ νοῦ. καὶ αὐτὸς δὲ νοητός ἐστιν*
ὥσπερ τὰ νοητά. ἐπὶ μὲν γὰρ τῶν ἄνευ ὕλης τὸ αὐτό ἐστι
τὸ νοοῦν καὶ τὸ νοούμενον· ἡ γὰρ ἐπιστήμη ἡ θεωρητικὴ καὶ
τὸ οὕτως ἐπιστητὸν τὸ αὐτό ἐστιν. τοῦ δὲ μὴ ἀεὶ νοεῖν τὸ 5
αἴτιον ἐπισκεπτέον. ἐν δὲ τοῖς ἔχουσιν ὕλην δυνάμει ἕκαστόν
ἐστι τῶν νοητῶν. ὥστ' ἐκείνοις μὲν οὐχ ὑπάρξει νοῦς (ἄνευ
γὰρ ὕλης δύναμις ὁ νοῦς τῶν τοιούτων), ἐκείνῳ δὲ τὸ νοη-
τὸν ὑπάρξει.

5 *Ἐπεὶ δ' ὥσπερ ἐν ἁπάσῃ τῇ φύσει ἐστί τι τὸ μὲν ὕλη* 10
ἑκάστῳ γένει (τοῦτο δὲ ὃ πάντα δυνάμει ἐκεῖνα), ἕτερον δὲ
τὸ αἴτιον καὶ ποιητικόν, τῷ ποιεῖν πάντα, οἷον ἡ τέχνη
πρὸς τὴν ὕλην πέπονθεν, ἀνάγκη καὶ ἐν τῇ ψυχῇ ὑπάρχειν
ταύτας τὰς διαφοράς. καὶ ἔστιν ὁ μὲν τοιοῦτος νοῦς τῷ πάντα
γίνεσθαι, ὁ δὲ τῷ πάντα ποιεῖν, ὡς ἕξις τις, οἷον τὸ φῶς· 15
τρόπον γάρ τινα καὶ τὸ φῶς ποιεῖ τὰ δυνάμει ὄντα χρώ-
ματα ἐνεργείᾳ χρώματα. καὶ οὗτος ὁ νοῦς χωριστὸς καὶ
2 *ἀπαθὴς καὶ ἀμιγής, τῇ οὐσίᾳ ὢν ἐνέργεια. ἀεὶ γὰρ τιμιώτε-*
ρον τὸ ποιοῦν τοῦ πάσχοντος καὶ ἡ ἀρχὴ τῆς ὕλης. τὸ δ'
αὐτό ἐστιν ἡ κατ' ἐνέργειαν ἐπιστήμη τῷ πράγματι· ἡ δὲ 20
κατὰ δύναμιν χρόνῳ προτέρα ἐν τῷ ἑνί, ὅλως δὲ οὐ χρόνῳ·
ἀλλ' οὐχ ὁτὲ μὲν νοεῖ ὁτὲ δ' οὐ νοεῖ. χωρισθεὶς δ' ἐστὶ μόνον
τοῦθ' ὅπερ ἐστί, καὶ τοῦτο μόνον ἀθάνατον καὶ ἀΐδιον. οὐ

30. puncto post *κοινόν τι* posito, pro *διῄρηται* leg. *διὸ εἴρηται* Ald., quam secutus est Wallace || 31. *ἂν*] *ἂν μὴ* L V W et inter versus U X, *ἂν* insert. E_2, *πρὶν νοεῖν* Simpl. Prisc. 35, 33, *πρὶν ἂν νοῇ* etiam Them. || post *νοῇ* vulg. punctum || *δυνάμει* coni. Cornford, *δεῖ* reliqui et scripti et impressi omnes || post *οὕτως* excidisse *ὑπο-λαβεῖν* coni. Torst. || 430a, 1. *ᾧ* om. E S U V X y et vet. transl. || *ὑπάρχειν* S U V X || *καταγεγραμμένον* L et E, sed *κατα* expunct. (Bhl.), *γεγραμ.* etiam Them. || 2. post *γεγραμ-μένον* punctum Bek. Trend., colon posuit Torst., sustulit Rodier || 4. *ἡ* ante *θε.* om. E, leg. Them. Simpl. || 6. *μόνον ἕκαστον* y Ald. Sylb. || 8. *δύναμίς ἐστιν ὁ* L S U V W X || 10. *ἐπει-δὴ* coni. Essen III, p. 43, cui assentitur Susemihl, Phil. Woch. 1893, p. 1321 || *πάσῃ* T y Theoph. ap. Them. 108, 20 Simpl. 240, 1 in lemmate, cf. tamen 241, 27, *ἁπάσῃ* etiam Philop. 539, 13 Them. 103, 1 Soph. 125, 15 || 11. *ὃ*] *ὅτι* U V X, om. y, *ὃ* etiam Soph. || *ἐκεῖνο* E, o in α mutat. E_2 (Bhl.), *ἐκεῖνα* etiam Philop. Soph. || 12. *καὶ τὸ π.* L W || *τῷ*] *ὃ τῷ* L T X || 17. *οὗτος*] *οὐχ ὡς* S || 18. *ἀμιγὴς καὶ ἀπαθὴς* S T U V W X y Philop., *ἀπαθ. καὶ ἀμιγὴς* E Them. Simpl. || *ἐνέργεια* ex Simpl. restituit Torst., idem habent etiam Simpl. cod. Marcianus A in Phys. 1162, 3 Theoph. ap. Prisc. 28, 12. 29, 25 Bon., Ind. Ar. 491 b 4, *ἐνεργείᾳ* omnes codd., etiam Them. 106, 5 Philop. Soph. || 19. *τὸ δ' αὐτό*...21. *δὲ οὐ χρόνῳ*

common element," and say that the mind is in a manner potentially all objects of thought, but is actually none of them until it thinks: potentially in the same sense as in a tablet which has nothing actually written upon it the writing exists potentially? This is exactly the case with the mind. Moreover, the mind itself 12 is included among the objects which can be thought. For where the objects are immaterial that which thinks and that which is thought are identical. Speculative knowledge and its object are identical. (We must, however, enquire why we do not think always.) On the other hand, in things containing matter each of the objects of thought is present potentially. Consequently material objects will not have mind in them, for the mind is the power of becoming such objects without their matter; whereas the mind will have the attribute of being its own object.

5 Intellect passive and active.

But since, as in the whole of nature, to something which serves as matter for each kind (and this is potentially all the members of the kind) there corresponds something else which is the cause or agent because it makes them all, the two being related to one another as art to its material, of necessity these differences must be found also in the soul. And to the one intellect, which answers to this description because it becomes all things, corresponds the other because it makes all things, like a sort of definite quality such as light. For in a manner light, too, converts colours which are potential into actual colours. And it is this intellect which is separable and impassive and unmixed, being in its essential nature an activity. For that which acts is always superior to that which is acted upon, 2 the cause or principle to the matter. Now actual knowledge is identical with the thing known, but potential knowledge is prior in time in the individual; and yet not universally prior in time. But this intellect has no intermittence in its thought. It is, however, only when separated that it is its true self, and this, its essential nature, alone is immortal and eternal. But we do not

alieno loco posita esse iudicant Kampe, p. 282 Bruno Keil, Analect. Isocrat. spec., p. 52 Susemihl, Phil. Woch. 1884, p. 784: cf. Alex. ap. Philop. 558, 5 sqq. || 19. τὸ δ' αὐτό E L, etiam Soph., αὐτὸ δ' reliqui codd. || 21. οὐ E Philop. Bek. Trend., οὐδὲ insert. E_2 (Rr.) et reliqui codd. Soph. Torst. (cui assentitur etiam Zeller, p. 571) Rodier, οὐδὲ ἐν Them. 101, 23. 28 || post χρόνῳ virgulam poni vult Zeller, p. 572 in adn., posuit Rodier || 22. οὐχ om. W y Plut. ap. Philop. 535, 13 Simpl. 245, 34 et 263, 8 Soph. Torst. Kampe, p. 282 Susemihl, Phil. Anz. 1873, p. 690, Oecon., p. 86 Siebeck, Gesch. d. Psych. I, 2, p. 64, οὐχ leg. Them. 101, 24 et 99, 35 Philop. et ap. Philop. Alex. Plotinus Marinus vet. transl., retineri malunt etiam Zeller, p. 571 Brentano, p. 182 Schlottmann, das Vergängliche und Unverg. in der Seele nach Arist., p. 43 || 23. ἀΐδιον καὶ ἀθάνατον W, ἀθάνατον καὶ ἀΐδιον etiam Them. Simpl. Philop. Soph.

μνημονεύομεν δέ, ὅτι τοῦτο μὲν ἀπαθές, ὁ δὲ παθητικὸς
νοῦς φθαρτός, καὶ ἄνευ τούτου οὐθὲν νοεῖ. 25

6 Ἡ μὲν οὖν τῶν ἀδιαιρέτων νόησις ἐν τούτοις, περὶ ἃ οὐκ
ἔστι τὸ ψεῦδος. ἐν οἷς δὲ καὶ τὸ ψεῦδος καὶ τὸ ἀληθές, σύν-
θεσίς τις ἤδη νοημάτων ὥσπερ ἓν ὄντων, καθάπερ Ἐμπεδο-
κλῆς ἔφη "ᾗ πολλῶν μὲν κόρσαι ἀναύχενες ἐβλάστησαν,"
ἔπειτα συντίθεσθαι τῇ φιλίᾳ, οὕτω καὶ ταῦτα κεχωρισμένα 30
2 συντίθεται, οἷον τὸ ἀσύμμετρον καὶ ἡ διάμετρος· ἂν δὲ γενο-
μένων ἢ ἐσομένων, τὸν χρόνον προσεννοῶν καὶ συντιθείς. τὸ 430b
γὰρ ψεῦδος ἐν συνθέσει ἀεί· καὶ γὰρ ἂν τὸ λευκὸν μὴ
λευκόν, τὸ μὴ λευκὸν συνέθηκεν. ἐνδέχεται δὲ καὶ διαίρεσιν
φάναι πάντα. ἀλλ' οὖν ἔστι γε οὐ μόνον τὸ ψεῦδος ἢ ἀλη-
θές, ὅτι λευκὸς Κλέων ἐστίν, ἀλλὰ καὶ ὅτι ἦν ἢ ἔσται. τὸ δὲ ἓν 5
3 ποιοῦν, τοῦτο ὁ νοῦς ἕκαστον. τὸ δ' ἀδιαίρετον ἐπεὶ διχῶς, ἢ
δυνάμει ἢ ἐνεργείᾳ, οὐθὲν κωλύει νοεῖν τὸ ἀδιαίρετον, ὅταν
νοῇ τὸ μῆκος (ἀδιαίρετον γὰρ ἐνεργείᾳ), καὶ ἐν χρόνῳ ἀδιαι-
ρέτῳ· ὁμοίως γὰρ ὁ χρόνος διαιρετὸς καὶ ἀδιαίρετος τῷ
μήκει. οὔκουν ἔστιν εἰπεῖν ἐν τῷ ἡμίσει τί ἐνοεῖ ἑκατέρῳ· 10
οὐ γάρ ἐστιν, ἂν μὴ διαιρεθῇ, ἀλλ' ἢ δυνάμει. χωρὶς δ'
ἑκάτερον νοῶν τῶν ἡμίσεων διαιρεῖ καὶ τὸν χρόνον ἅμα· τότε
δ' οἱονεὶ μήκη. εἰ δ' ὡς ἐξ ἀμφοῖν, καὶ ἐν τῷ χρόνῳ τῷ
4 ἐπ' ἀμφοῖν. τὸ δὲ μὴ κατὰ ποσὸν ἀδιαίρετον ἀλλὰ τῷ εἴ-

24. *μνημονεύομεν*...431 b, 16. *ἐκεῖνα* desunt E, folio exciso inter folia 200 et 201 || 27. *καὶ* om. L || *ψεῦδος ἤδη καὶ* S T U V W X y et, ut videtur, Them. 109, 9 || 27. *ἐν οἷς δὲ*...b, 5. *ἔσται* e duabus ed. contam., pr. b, 1. *τὸ*...5. *ἔσται*, post. a, 27. *ἐν οἷς*... b, 1. *προσεννοῶν*, iudicat Torst., quod refellit Vahlen, Aristotel. Aufsätze I, p. 4 sqq. et Noetel, Zeitschr. f. Gym. 1864, p. 140 || 30. *φιλίᾳ, οὕτω* Vahlen, p. 6, *φιλίᾳ. οὕτω* Bek. Trend. Torst. || 31. *συντίθεσθαι* S T V W y || post *διάμετρος* addunt *ἢ τὸ σύμμετρον καὶ ἡ διάμετρος* W Simpl. Torst., quod additamentum reicit Vahlen, p. 7 sq., om. etiam vet. transl. || *γινομένων* V W X Bek. Trend., *γενομένων* etiam Them. Simpl. Torst. Vahlen Steinhart || 430 b, 1. *πρὸς ἓν νοῶν* L X, *προσεννοῶν* etiam Simpl. et sine dubio Them. 109, 18 || *καὶ συντιθεὶς* unc. incl. Torst., leg. Simpl. Philop. Soph. et defendit Vahlen, p. 9 sqq. || 3. *τὸ* (*καὶ τὸ* solus T) *μὴ λευκὸν συνέθηκεν* omnes codd., *τὸ μὴ λευκὸν* unc. incl. Trend. in prima edit., cui assentitur Dittenberger, Gött. gel. Anz., p. 1615, in alt. ed. scripsit Belger de coniectura Roeperi, Philologus VII, p. 324: *τὸ μὴ λευκὸν λευκὸν συν.*, quod iam Torst. coniecerat, <*καὶ λευκὸν*> *τὸ μὴ λευκόν, συνέθηκεν* coni. Vahlen, p. 12, <*καὶ*> *τὸ μὴ λευκὸν* <*λευκόν*>, *συνέθηκεν* Biehl, quod legisse videtur Philop. 548, 10 sq., "si album non albo aut si non album albo componit" vet. transl. || *ἐνδέχεται*...4. *πάντα* fort. post 5. *ἔσται* transponenda censet Maier I, p. 30, in adn. || 3. *καὶ διαίρεσιν*] *καὶ κατὰ* (vel *κατὰ*) *διαίρεσιν* coni. Chandler, p. 8 || 4. pro *πάντα* coni. *ταῦτα* vel *τοιαῦτα* Torst., leg. *πάντα* etiam Them., *ἄμφω* in interpr. Philop., *πάντα* defendit Vahlen, p. 14 sq. || *γε* eici vult Torst., def. Vahlen, p. 17 || verba *οὐ μόνον* post *ἀληθές* transponi vult Torst., cui adversatur

remember because this is impassive, while the intellect which can be affected is perishable and without this does not think at all.

6 The process of thinking indivisible wholes belongs to a sphere from which falsehood is excluded. But where both truth and falsehood are possible there is already some combining of notions into one. As, in the words of Empedocles, "where sprang into being the neckless heads of many creatures," then afterwards Love put them together, so these notions, first separate, are combined; as, for instance, the notions incommensurable and diagonal. **2** And, if the thinking refers to the past or to the future, the notion of time is included in the combination. Falsehood, in fact, never arises except when notions are combined. For, even if white be asserted to be not-white, not-white is brought into a combination. We may equally well call every statement a disjunction. But at any rate under truth and falsehood we include not only the assertion that Cleon is white, but also the assertion that he was or will be. And the unifying principle is in every case the mind.

Judgment combines or separates.

3 Since, however, the term indivisible has two meanings, according as a whole is not potentially divisible or is actually undivided, there is nothing to hinder us from thinking an indivisible whole, when we think of a length (that being actually undivided), or from thinking it in an indivisible time. For the time is a divisible or indivisible unit in the same way as the length thought of. We cannot therefore state what the mind thinks in each half of the time. For, if the whole be undivided, the half has only potential existence. But, if the mind thinks each half separately, it simultaneously divides the time also. And in that case it is as if the parts were separate lengths. If, however, the mind conceives the length as made up of the two halves, then the time may be regarded as made up of corresponding halves.

Single concepts, how apprehended.

4 Again, that which is not quantitatively but specifically an

Vahlen || 5. *δὴ* U X || 6. *ἑκάστοτε* coni. H. Jackson || 7. *τὸ ἀδ.*] *τὸ διαιρετὸν ἢ ἀδιαίρετον* coni. Torst., potest tale quid legisse Philop. 549, 18, *τι ἀδιαίρετον* coni H. Jackson || *ὅταν*] *οἷον ὅταν* coni. Torst., *ὡς ὅταν* Steinhart || 8. *ἀδ...ἐνεργείᾳ* in parenth. Torst. || post *γὰρ* addendum *τι δυνάμει ἔσται* censet Essen III, p. 49 || 9. *ὁμοίως...*20. *μήκει* e duab. rec. contam. iudicat Torst., pr. 17. *ἔνεστι...*20. *μήκει*, post. 9. *ὁμοίως...*10. *μήκει*, quod negant Noetel et Dittenberger || 9. *καὶ ἀδ.*] *καὶ οὐ διαιρετὸς* T, om. X et pr. W, *καὶ ἀδιαίρετος* etiam Them. Simpl. Philop. || 10. *ἐνόει* L Torst., *ἐνόεις* y, *ἐννοεῖν* T U W, tempus praesens etiam Them. Simpl. || 12. *τῶν ἡμίσεων* ante *νοῶν* S U, om. T X || 14. *τὸ δὲ μὴ...*15. *ψυχῆς* post 20. *καὶ μήκει* transponenda censet Bywater, p. 58 || 14. *κατὰ τὸ ποσὸν* T X || *διαιρετὸν* pro *ἀδιαίρετον* coni. Wallace, cui adversatur Susemihl, Oecon., p. 86.

δει νοεῖ ἐν ἀδιαιρέτῳ χρόνῳ καὶ ἀδιαιρέτῳ τῆς ψυχῆς· 15
κατὰ συμβεβηκὸς δέ, καὶ οὐχ ᾗ ἐκεῖνα διαιρετά, ᾧ νοεῖ
καὶ ἐν ᾧ χρόνῳ, ἀλλ' ᾗ ἀδιαίρετα· ἔνεστι γὰρ κἀν τούτοις
τι ἀδιαίρετον, ἀλλ' ἴσως οὐ χωριστόν, ὃ ποιεῖ ἕνα τὸν χρό-
νον καὶ τὸ μῆκος. καὶ τοῦθ' ὁμοίως ἐν ἅπαντί ἐστι τῷ συνεχεῖ
5 καὶ χρόνῳ καὶ μήκει. ἡ δὲ στιγμὴ καὶ πᾶσα διαίρεσις, καὶ 20
τὸ οὕτως ἀδιαίρετον, δηλοῦται ὥσπερ ἡ στέρησις. καὶ ὅμοιος
ὁ λόγος ἐπὶ τῶν ἄλλων, οἷον πῶς τὸ κακὸν γνωρίζει ἢ
6 τὸ μέλαν· τῷ ἐναντίῳ γάρ πως γνωρίζει. δεῖ δὲ δυνάμει
εἶναι τὸ γνωρίζον καὶ ἐνεῖναι ἐν αὐτῷ. εἰ δέ τινι μή ἐστιν
ἐναντίον [τῶν αἰτίων], αὐτὸ ἑαυτὸ γινώσκει καὶ ἐνεργείᾳ ἐστὶ 25
7 καὶ χωριστόν. ἔστι δ' ἡ μὲν φάσις τι κατά τινος, ὥσπερ ἡ
κατάφασις, καὶ ἀληθὴς ἢ ψευδὴς πᾶσα· ὁ δὲ νοῦς οὐ πᾶς,
ἀλλ' ὁ τοῦ τί ἐστι κατὰ τὸ τί ἦν εἶναι ἀληθής, καὶ οὐ τὶ
κατά τινος· ἀλλ' ὥσπερ τὸ ὁρᾶν τοῦ ἰδίου ἀληθές, εἰ δ' ἄν-
θρωπος τὸ λευκὸν ἢ μή, οὐκ ἀληθὲς ἀεί, οὕτως ἔχει ὅσα 30
ἄνευ ὕλης.

7 Τὸ δ' αὐτό ἐστιν ἡ κατ' ἐνέργειαν ἐπιστήμη τῷ πράγ- 431 a
ματι. ἡ δὲ κατὰ δύναμιν χρόνῳ προτέρα ἐν τῷ ἑνί, ὅλως
δὲ οὐδὲ χρόνῳ· ἔστι γὰρ ἐξ ἐντελεχείᾳ ὄντος πάντα τὰ γι-
γνόμενα. φαίνεται δὲ τὸ μὲν αἰσθητὸν ἐκ δυνάμει ὄντος τοῦ
αἰσθητικοῦ ἐνεργείᾳ ποιοῦν· οὐ γὰρ πάσχει οὐδ' ἀλλοιοῦται. 5

15. *ψυχῆς νοήσει κατὰ συμβεβηκὸς* sine interpunctione T V, *νοήσει* etiam legisse videtur Them. 110, 19, *νοεῖ* leg. Simpl. || 16. mallem hoc loco *οὐχ ᾗ* [*ἐκεῖνα*] et 17. *ἀλλ' ᾗ* <*ἐκεῖνα*> || virgulam post *διαιρετὰ* Bek. Trend. Bywater, p. 58, post *ἐκεῖνα* Torst. Biehl Rodier || *ἀδιαιρέτῳ τῆς ψυχῆς, κατὰ συμβεβηκὸς δὲ καὶ οὐχ ᾗ ἐκεῖνα ἀδιαίρετα, ᾧ νοεῖ καὶ* coni. Christ || *ᾧ*] *ᾧ τε* coni. Torst., *τε* om. Simpl., *ὃ* cum Vicomercato Bywater, p. 59 || *ᾧ νοεῖ*...17. *χρόνῳ* interpolata esse censet Wilson, Trans. of Ox. Phil. Soc. 1882/3, p. 10, cui adversatur Susemihl, B. J. XXXIV, 29 || 17. *ἀλλ' ᾗ ἀδ.* unc. incl. Torst. Biehl, totam hanc enunciationem a Torst. sanatam esse agnoscit etiam Hayduck, progr. Gryph. 1873, p. 5, contra Bywater haec verba, ut necessaria, retinere vult, p. 59, etiam Maier I, p. 32 in adn., leg. Simpl., sine uncis etiam Rodier, qui tamen *ἄλλῃ* pro *ἀλλ' ᾗ* scripsit || 19. *καὶ τὸ μῆκος* interpolata esse censet Wilson, l. l., probat Susemihl || *καὶ τοῦθ'*...20. *μήκει* post 10. *μήκει* transponenda esse censet Susemihl, B. J. XXXIV, 29 || 21. *καὶ ὅμοιος*...23. *μέλαν* delenda esse censet Hayduck, p. 6 || 24. *γνωρίζειν* V || *ἐνεῖναι* S U y Simpl. Philop. Bek. Trend. Brentano, p. 115, *ἓν εἶναι* L T V W X vet. transl. Biehl, *καὶ μὴ ἓν εἶναι αὐτῶν* coni. Torst., *ἐναντίον εἶναι ἐν αὐτῷ* coni. Bywater, p. 60 || *ἐν* ante *αὐτῷ* om. solus W Biehl, leg. etiam Simpl. || 25. *αἰτίων*] *ἐναντίων* S, *αἰτίων* etiam Them. Philop. Simpl. Brentano, p. 183 Bullinger, Arist. Nus-Lehre, p. 11, vel *ἐναντίων* vel *ὄντων* coni. Torst., cui assentitur etiam Kampe, p. 275, adn. 1, *ἀδιαιρέτων* coni. Essen, *νοητῶν* dubitanter coni. Rodier II, 487, *τῶν αἰτίων* delenda esse censet Zeller, p. 578, cui assentiuntur Susemihl et Bywater, p. 60, unc. inclusi || *ἐνέργεια* fort. Them. 112, 3 Simpl. 258, 27. 31 || 26. *τι*] *τις* L, unde *τις φάσις κατά τινος* coni. Rodier II, 489, *ἔστι δ' ἡ μὲν*

indivisible whole the mind thinks in an indivisible unit of time and by an indivisible mental act. *Per accidens*, however, such specific unity is divisible, though not in the same way as they, the act of thought and the time required for the act, are divisible, but in the same way as they are whole and indivisible. For in these specific unities also there is present a something indivisible, though certainly not separately existent, the same as that which constitutes the unity of both the time and the length. And, as with time and length, so in like manner with whatever is continuous. But the 5 point and every division and whatever is an undivided whole in the same sense as the point is clearly explained by the analogy of privation. And the same explanation holds in all other cases. How, for instance, is evil apprehended, or black? In some fashion by its contrary. But that which apprehends must poten- 6 tially be, and must contain within itself, the contrary which it apprehends. If, however, there be something which has no contrary [*some one of the causes*], then it is itself the content of its own knowledge, is in actuality and is separately existent.

Hypothesis of self-thinking thought.

Now every proposition, like an affirmative proposition, predi- 7 cating something of something, is true or false. But with thought this is not always so. When its object is the What in the sense of the quiddity and there is no predication, thought is in every case true. But, as the perception by sight of the proper object of sight is infallibly true, whereas in the question whether the white object is a man or not, perception by sight is not always true, so is it with immaterial objects.

Intellect sometimes infallible.

Now actual knowledge is identical with the thing known. But **7** potential knowledge is prior in time in the individual, and yet not universally prior even in time. For it is from something actually existent that all which comes into being is derived. And manifestly the sensible object simply brings the faculty of sense which was potential into active exercise: in this transition, in fact, the sense is not acted upon or qualitatively changed. Conse-

κατάφασίς τι κατά τινος, ὥσπερ καὶ ἡ ἀπόφασις coni. Torst., vulgatam tuentur etiam Simpl. Philop. 556, 8 || *ὥσπερ καὶ ἡ* W Torst., *καὶ* non leg. Simpl. || *ὥσπερ ἡ κατάφασις, καὶ* unc. incl. Essen || 27. *ἢ*] *καὶ* L || 28. *καὶ* unc. incl. Essen || 29. *ἀλλ' ὥσπερ*...30. *ἀληθὲς ἀεί* unc. incl. Essen III, p. 51 || 29. *ὁρᾶν* <*ἐπί*> coni. Beare, p. 90, adn. 2 || 30. post *οὕτως* in lemmate add. *δὲ* Simpl. cod. A || 431 a, 1. *τὸ δ' αὐτὸ*...7. *τετελεσμένου* alieno loco posita esse iudicat Torst., cui assentitur Zeller, p. 571, leg. veteres interpretes, nisi quod *τὸ δ' αὐτὸ*...3. *γιγνόμενα* praeterit Them., in quibus etiam Alex. ap. Philop. offendit || 1. *τὸ αὐτὸ δ'* T U V X y || 2. *τινὰ τῶν βιβλίων ἔχουσιν ὅλως, τινὰ δὲ ἁπλῶς* annotat Philop.

διὸ ἄλλο εἶδος τοῦτο κινήσεως· ἡ γὰρ κίνησις τοῦ ἀτελοῦς
ἐνέργεια ἦν, ἡ δ' ἁπλῶς ἐνέργεια ἑτέρα ἡ τοῦ τετελεσμένου.
2 τὸ μὲν οὖν αἰσθάνεσθαι ὅμοιον τῷ φάναι μόνον καὶ νοεῖν·
ὅταν δὲ ἡδὺ ἢ λυπηρόν, οἷον καταφᾶσα ἢ ἀποφᾶσα, διώ-
κει ἢ φεύγει· καὶ ἔστι τὸ ἥδεσθαι καὶ λυπεῖσθαι τὸ ἐνερ- 10
γεῖν τῇ αἰσθητικῇ μεσότητι πρὸς τὸ ἀγαθὸν ἢ κακόν, ᾗ τοι-
αῦτα. καὶ ἡ φυγὴ δὲ καὶ ἡ ὄρεξις τοῦτο ἡ κατ' ἐνέργειαν,
καὶ οὐχ ἕτερον τὸ ὀρεκτικὸν καὶ φευκτικόν, οὔτ' ἀλλήλων οὔτε
3 τοῦ αἰσθητικοῦ· ἀλλὰ τὸ εἶναι ἄλλο. τῇ δὲ διανοητικῇ ψυχῇ
τὰ φαντάσματα οἷον αἰσθήματα ὑπάρχει. ὅταν δὲ ἀγαθὸν 15
ἢ κακὸν φήσῃ ἢ ἀποφήσῃ, φεύγει ἢ διώκει (διὸ οὐδέποτε
νοεῖ ἄνευ φαντάσματος ἡ ψυχή), ὥσπερ δὲ ὁ ἀὴρ τὴν κό-
ρην τοιανδὶ ἐποίησεν, αὕτη δ' ἕτερον, καὶ ἡ ἀκοὴ ὡσαύ-
τως, τὸ δὲ ἔσχατον ἕν, καὶ μία μεσότης, τὸ δ' εἶναι αὐτῇ
4 πλείω. τίνι δ' ἐπικρίνει τί διαφέρει γλυκὺ καὶ θερμόν, εἴ- 20
ρηται μὲν καὶ πρότερον, λεκτέον δὲ καὶ ὧδε. ἔστι γὰρ ἕν
τι, οὕτω δὲ καὶ ὡς ὅρος. καὶ ταῦτα, ἓν τῷ ἀνάλογον ἢ
τῷ ἀριθμῷ ὄν, ἔχει πρὸς ἑκάτερον, ὡς ἐκεῖνα πρὸς ἄλληλα·
τί γὰρ διαφέρει τὸ ἀπορεῖν πῶς τὰ μὴ ὁμογενῆ κρίνει ἢ

6. *εἶδος* om. S X, post *τοῦτο* T U V y Them. 28, 36, post *κινήσεως* W, vulgatam tuetur Simpl. || 7. *ἦν* om. L S U V X Them. 28, 37 et Simpl. || *ἡ* post *ἑτέρα* om. L, leg. Them. 29, 1 || post *τετελεσμένου* lacunam esse iudicat Susemihl, Burs. Jahresb. IX, 351 || 9. *ὅταν*] *ὅτι* coni. Essen III, p. 58 || 10. *ἢ λυπ.* T U V W Simpl. || 11. *πρὸς τὸ* ante *τῇ* transponendum putat Essen, l. l. || *ἢ τοιοῦτο* L, om. X, *ἢ τοιαῦτα* etiam Philop., *ἢ τὰ τοιαῦτα* Simpl. || 12. *δὴ* S U W X, om. T V || *ταυτὸν* T, *τὸ αὐτὸ* L V Rodier, *ταὐτὸ* scripsit Biehl, *τοῦτο* reliqui et Bek. Trend. Torst., qui conicit *τὸ αὐτὸ τοῦτο*, veteres interp. quomodo legerint, incertum est || *ἡ* om. V, aut delendum aut *ᾗ* scribendum censet Trend., unc. incl. Rodier || 13. *καὶ τὸ φ.* L et interpret. Them. Simpl. || 14. *τῇ δὲ διαν*....17. *ἡ ψυχή* in parenth. ponenda et fort. ante 431 b, 2. *τὰ μὲν οὖν εἴδη* transponenda censet Cornford || 15. *αἰσθήματα*] *αἰσθητὰ* coni. Schell, Einh. d. Seelenleb. p. 19 || 15. *ὅταν*...16. *διώκει* post 17. *ψυχή* ponenda esse iudicat Susemihl || 16. *φήσῃ ἢ ἀποφήσῃ* solus L, uncis incl. Torst., *καταφήσῃ ἢ ἀποφήσῃ* y, *φησὶν ἢ ἀπόφησι* T X, *κατάφησιν ἢ ἀπόφησι* U, *ἔστι κατάφησιν ἢ ἀπόφησιν* V, *ἔστι καταφήσειν ἢ ἀποφήσειν* corr. S, *κατάφασις ἢ ἀπόφασις* W, Philop. 559, 31 interpretatur *τὰ ὑποκείμενα οἱονεὶ καταφάσεις εἰσὶ καὶ ἀποφάσεις* || *καὶ φεύγει* S T U V W X, *ἢ φεύγει* y || 16. *διὸ*...17. *ψυχή* secludenda esse coni. Torst., in parenth. posui || 17. totum hunc locum ab *ὥσπερ*...b, 1. *λευκὸν* a re proposita alienum esse iudicat Torst., non interpretatur Them., recte explicat Neuhaeuser, p. 51 sqq. || post *ἡ ψυχή* virgulam Bek. Trend., punctum Torst. Biehl Rodier || *δὲ*] *γὰρ* coni. Essen || 18. *αὐτὴ* U V W y Bek. Trend., *αὕτη* etiam Simpl. Soph. Torst. || *δ'* unc. incl. Essen || 19. post *ὡσαύτως* colon Bek. Trend. Rodier || *αὐτῇ* om. S U V X || 20. post *πλείω* signum enunciati non absoluti cum Torst. posuit Biehl, adversatur Rodier II, 499, etiam Simpl. et Philop. hoc loco desiderant apodosin, putant autem eam ex praecedentibus supplendam esse; verba 17. *ὥσπερ*...20. *πλείω* post 21. et 22. *ἕν τι* transponenda et apodosin sic conformandam esse: *οὕτω δὴ καὶ ταῦτα* (omissis verbis *καὶ ὡς ὅρος*)

quently this must be a different species of motion. For motion is, as we saw, an activity of that which is imperfect; but activity in the absolute sense, that is, activity of that which has reached perfection, is quite distinct.

Sense affirming or denying, pursues or avoids.

Sensation, then, is analogous to simple assertion or simple **2** apprehension by thought and, when the sensible thing is pleasant or painful, the pursuit or avoidance of it by the soul is a sort of affirmation or negation. In fact, to feel pleasure or pain is precisely to function with the sensitive mean, acting upon good or evil as such. It is in this that actual avoidance and actual appetition consist: nor is the appetitive faculty distinct from the faculty of avoidance, nor either from the sensitive faculty; though logically they are different.

So, too, the mind.

But to the thinking soul images serve as present sen- **3** sations: and when it affirms or denies good or evil, it avoids or pursues (this is why the soul never thinks without an image). To give an illustration: the air impresses a certain quality on the pupil of the eye, and this in turn upon something else, and so also with the organ of hearing, while the last thing to be impressed is one and is a single mean, though with a plurality of distinct aspects.

What that is by which the soul judges that sweet is different **4** from warm has been explained above, but must be restated here.

The unity of sense restated.

It is a unity, but one in the same sense as a boundary point, and its object, the unity by analogy of these two sensibles or their numerical unity, is related to each of the two in turn as they, taken separately, are to each other. For what difference does it make whether we ask how we judge the sensibles that do not fall under the same genus, or the contraries which do,

censet Freudenthal, Rhein. Mus. 1869, p. 398, cui assentitur Susemihl, Burs. Jahresb. XVII, p. 264 et Phil. Wochenschr. 1882, p. 1283 || 21. ὧδε] νῦν T W y et in interpret. Simpl. Philop. || ἔστι γὰρ...23. ἄλληλα ante 20. τίνι tr [illegible]enda censet Essen II, p. 88 || 22. καὶ ὡς] καὶ ὁ X y, ἡ στιγμὴ καὶ ὁ T, om. cum ipso ὅρος L V, in interpret. ὥσπερ καὶ ὁ ὅρος Simpl., ὥσπερ ὅρος Philop., qui ἡ στιγμὴ non legerunt; οὕτω δὲ καὶ ἡ στιγμὴ καὶ ὅλως ὁ ὅρος de coniectura scripsit Torst. || post ταῦτα virgulam posuit Rodier || ἐν L S V X Trend., ἓν etiam Simpl. Philop. Soph. in marg. Bek. Torst. || 22. et 23. ᾗ τῷ] ἡ τῷ L y, ᾗ U V W X Simpl., om. S, καὶ τῷ T Philop. Bek. Trend. Torst. Biehl Rodier || 23. ὄν] ὂν omnes libri scripti et ante Biehlium impressi, ὄν restituerunt Freudenthal, l. l. et Neuhaeuser, confirmant Simpl. et vet. transl., quae vertit *ens* || καὶ ταῦτα ἐν τῷ ἀνάλογον. καὶ τὸ ἀριθμῷ ἓν ἔχει πρὸς ἑκάτερον ὡς in scholis coni. H. Jackson || ἑκάτερα Simpl., post ἑκάτ. excidisse ἐναντίον coni. Torst., cui assentitur Freudenthal || ὡς...ἄλληλα unc. incl. Torst., legit etiam Simpl. et fort. Philop., defendit Neuhaeuser, p. 57 || ὡς] ἢ Simpl. || 24. μὴ om. T V W y Simpl. Bek. Trend., leg. etiam Philop. Soph. vet. transl.

τὰ ἐναντία, οἷον λευκὸν καὶ μέλαν; ἔστω δὴ ὡς τὸ Α τὸ 25
λευκὸν πρὸς τὸ Β τὸ μέλαν, τὸ Γ πρὸς τὸ Δ [ὡς ἐκεῖνα
πρὸς ἄλληλα]· ὥστε καὶ ἐναλλάξ. εἰ δὴ τὰ ΓΔ ἑνὶ εἴη
ὑπάρχοντα, οὕτως ἕξει ὥσπερ καὶ τὰ ΑΒ, τὸ αὐτὸ μὲν
καὶ ἕν, τὸ δ' εἶναι οὐ τὸ αὐτό, κἀκεῖνο ὁμοίως. ὁ δ' αὐτὸς
λόγος καὶ εἰ τὸ μὲν Α τὸ γλυκὺ εἴη, τὸ δὲ Β τὸ λευκόν. 431 b
5 τὰ μὲν οὖν εἴδη τὸ νοητικὸν ἐν τοῖς φαντάσμασι νοεῖ,
καὶ ὡς ἐν ἐκείνοις ὥρισται αὐτῷ τὸ διωκτὸν καὶ φευκτόν,
καὶ ἐκτὸς τῆς αἰσθήσεως, ὅταν ἐπὶ τῶν φαντασμάτων ᾖ,
κινεῖται· οἷον αἰσθανόμενος τὸν φρυκτὸν ὅτι πῦρ, [τῇ κοινῇ] 5
6 γνωρίζει, ὁρῶν κινούμενον, ὅτι πολέμιος. ὁτὲ δὲ τοῖς ἐν τῇ
ψυχῇ φαντάσμασιν ἢ νοήμασιν ὥσπερ ὁρῶν λογίζεται καὶ
βουλεύεται τὰ μέλλοντα πρὸς τὰ παρόντα· καὶ ὅταν εἴπῃ
ὡς ἐκεῖ τὸ ἡδὺ ἢ λυπηρόν, ἐνταῦθα φεύγει ἢ διώκει,
καὶ ὅλως ἐν πράξει. καὶ τὸ ἄνευ δὲ πράξεως, τὸ ἀληθὲς 10
καὶ τὸ ψεῦδος, ἐν τῷ αὐτῷ γένει ἐστὶ τῷ ἀγαθῷ καὶ κακῷ·
7 ἀλλὰ τῷ γε ἁπλῶς διαφέρει καὶ τινί. τὰ δὲ ἐν ἀφαι-
ρέσει λεγόμενα νοεῖ ὥσπερ ἂν εἰ τὸ σιμόν, ᾗ μὲν σιμόν,
οὐ κεχωρισμένως, ᾗ δὲ κοῖλον, εἴ τις ἐνόει ἐνεργείᾳ, ἄνευ
τῆς σαρκὸς ἂν ἐνόει ἐν ᾗ τὸ κοῖλον· οὕτω τὰ μαθηματικὰ 15
8 οὐ κεχωρισμένα ὡς κεχωρισμένα νοεῖ, ὅταν νοῇ ἐκεῖνα. ὅλως
δὲ ὁ νοῦς ἐστὶν ὁ κατ' ἐνέργειαν τὰ πράγματα [νοῶν]. ἆρα
δ' ἐνδέχεται τῶν κεχωρισμένων τι νοεῖν ὄντα αὐτὸν μὴ κε-
χωρισμένον μεγέθους, ἢ οὔ, σκεπτέον ὕστερον.

25. *τἀναντία* S W X y Bek. Trend., *τὰ ἐναντία* etiam Soph. Torst. || 26. *ὡς*...27. *ἄλληλα* interpolata esse iudicant Christ, Stud. in Ar. libb. met. coll. (in thes.) Freudenthal et Baeumker, p. 74, unc. incl. Biehl Rodier, leg. Philop. 561, 10 || 27. *ἓν* T y || 28. *καὶ τὰ*] *καὶ τὸ* S T V, *κἂν εἰ τὰ* coni. Torst. || 29. pro *κἀκεῖνο*, quod etiam leg. Philop., coni. *κἀκεῖνα* Jul. Pacius Torst. Brentano || 431 b, 1. *καὶ*] *κἂν* S U V X Simpl. || *μὲν τὸ* S U V W X || 3. *ὥριστο* U X et corr. S, etiam Simpl. || 4. *αἰσθ. ὂν ὅταν* S T U V X, *αἰσθ. ὦν ὅταν* W y || 5. *φευκτὸν* T U V W X, *φρυκτὸν* etiam Simpl. Philop., de Them. codd. v. Hayducki ap. crit. ad 114, 1 || *ὅτι πῦρ* unc. incl. Torst., leg. Philop. Simpl. || *τῇ κινήσει* Basil. in marg., scripsit Torst., *τῇ κοινῇ* reliqui, etiam Simpl. Philop., delendum censet Bywater, p. 61, cui assentitur Susemihl, cf. Praechter, Berl. Phil. Woch., p. 196 sqq., unc. inclusi || 9. post *ἐνταῦθα* excidisse *τὸ ἀγαθὸν ἢ κακὸν* coni. Torst. || 10. *ὅλως*] *οὕτως* coni. Trend. || *καὶ* ante *τὸ ἀληθὲς* leg. Simpl. in lemmate || 11. *τὸ* om. L et fort. Philop. in interpr. 562, 10 || *καὶ τῷ κακῷ* L U X, *ἢ τῷ* W, *τῷ* om. etiam Simpl. || 12. *γε* om. S W y || 12. *τὰ δὲ*...19. *ὕστερον* a re proposita aliena et 12. *τὰ δὲ*...16. *ἐκεῖνα* corrupta esse iudicat Torst., locum ita restituit Bywater, p. 62: *τὰ δ' ἐν ἀφαιρέσει λεγόμενα νοεῖ, ὥσπερ ἄν, εἴ <τις> τὸ σιμὸν ᾗ μὲν σιμὸν οὔ [κεχωρισμένως], ᾗ δὲ κοῖλον [εἴ τις] ἐνόει, ἐνεργείᾳ <νοῶν> ἄνευ τῆς σαρκὸς ἂν ἐνόει ἐν ᾗ τὸ κοῖλον, οὕτω τὰ μαθηματικὰ κτέ.* || 12. *ἐν* om. S T U X Them., leg. Simpl. Philop. || 13. *ἂν* om. S V X, leg. etiam Philop. || 14. *ᾗ δὲ κοῖλον*] *εἰ δὲ καμπύλον* X, *καμπύλον* in interpret. etiam Simpl. Philop., *κοῖλον* Them. || *εἴ*

like white and black? Suppose, then, that as *A*, the white, is to *B*, the black, so *C* is to *D* [*that is, as those sensibles are to one another*]. It follows, *convertendo*, that *A* is to *C* as *B* to *D*. If, then, *C* and *D* are attributes of a single subject, the relation between them, like that between *A* and *B*, will be that they are one and the same, though the aspects they present are distinct: and so, too, of their single subject. The same would hold, supposing *A* were the sweet and *B* the white.

Images move to action.

Thus it is the forms which the faculty of thought thinks in 5 mental images. And, as in the region of sense the objects of pursuit and avoidance have been defined for it, so also outside sensation, when engaged with images, it is moved to action: as, for instance, you perceive a beacon and say "That is fire"; and then [*by the central sense*], seeing it in motion, you recognise that it signals the approach of an enemy. But at other 6 times under the influence of the images or thoughts in the soul you calculate as though you had the objects before your eyes and deliberate about the future in the light of the present. And when you pronounce, just as there in sensation you affirm the pleasant or the painful, here in thought you pursue or avoid: and so in action generally. And, further, what is unrelated to action, as truth and falsehood, is in the same class with the good and the evil. Yet in this, at any rate, they differ, that the former are absolute, the latter relative to some one concerned.

Mathematical objects, how conceived.

But the abstractions of mathematics, as they are called, the 7 mind thinks as it might conceive the snub-nosed; *quâ* snub-nosed, it would not be conceived apart from flesh, whereas *quâ* hollow, if anyone ever had actually so conceived it, he would have conceived it without the flesh in which the hollowness resides. So, too, when we think of mathematical objects, we conceive them, though not in fact separate from matter, as though they were separate. And, speaking 8 generally, mind in active operation is its objects [*when it thinks them*]. The question, whether it is possible for the mind to think anything which is unextended without being itself unextended, must for the present be postponed.

τις] *εἴ τι* L y Simpl., om. X, *εἴπερ* coni. Trend. || *ἐννοεῖ* S, *ἐννόει* V || *ὥσπερ ἄνευ* coni. Torst., quod refellit Vahlen, Oest. Gymn. Ztschr. 1867, p. 722 || 15. *ἂν* secludendum esse coni. Susemihl, Oecon., p. 86 || *ἐν ᾗ* om. S U V, leg. Simpl. || 16. *ὡς κεχ.*] *ὡσεὶ κεχ.* T, *τῇ ὑποστάσει* L, *τῇ ὑποστάσει ὡς κεχ.* W, alteram quoque lectionem ferri: *οὐ κεχωρισμένως ὡς κεχωρισμένως* commemorat Simpl., *ὡς κεχωρισμένα* etiam Philop. Simpl. et, ut videtur, Them. 114, 22 || *νοῦ* <*ᾗ*> *ἐκεῖνα* legendum proponit Bon., cf. Oest. Gymn. Ztschr. 1867, p. 722 || 17. *νοῶν* om. L U pr. E et Torst., uncis incl. Bon., Ind. Ar. 491 a, 61 Susemihl, B. J. XLII, 240 Busse, Hermes XXVIII, 271, legit Simpl. et vet. transl., non leg. 566, 22—24 neque ad 402 b, 7 (37, 26 sq.) Philop. || 18. *αὐτὸν ὄντα* S V W X y.

8 Νῦν δὲ περὶ ψυχῆς τὰ λεχθέντα συγκεφαλαιώσαν- 20
τες, εἴπωμεν πάλιν ὅτι ἡ ψυχὴ τὰ ὄντα πώς ἐστιν· πάντα
γὰρ ἢ αἰσθητὰ τὰ ὄντα ἢ νοητά, ἔστι δ' ἡ ἐπιστήμη μὲν
τὰ ἐπιστητά πως, ἡ δ' αἴσθησις τὰ αἰσθητά· πῶς δὲ τοῦτο,
2 δεῖ ζητεῖν. τέμνεται οὖν ἡ ἐπιστήμη καὶ ἡ αἴσθησις εἰς τὰ
πράγματα, ἡ μὲν δυνάμει εἰς τὰ δυνάμει, ἡ δ' ἐντελε- 25
χείᾳ εἰς τὰ ἐντελεχείᾳ. τῆς δὲ ψυχῆς τὸ αἰσθητικὸν καὶ
τὸ ἐπιστημονικὸν δυνάμει ταῦτά ἐστι, τὸ μὲν ἐπιστητὸν τὸ
δὲ αἰσθητόν. ἀνάγκη δ' ἢ αὐτὰ ἢ τὰ εἴδη εἶναι. αὐτὰ
μὲν δὴ οὔ· οὐ γὰρ ὁ λίθος ἐν τῇ ψυχῇ, ἀλλὰ τὸ εἶ-
δος· ὥστε ἡ ψυχὴ ὥσπερ ἡ χείρ ἐστιν· καὶ γὰρ ἡ χεὶρ 432a
ὄργανόν ἐστιν ὀργάνων, καὶ ὁ νοῦς εἶδος εἰδῶν καὶ ἡ αἴ-
3 σθησις εἶδος αἰσθητῶν. ἐπεὶ δὲ οὐδὲ πρᾶγμα οὐθέν ἐστι
παρὰ τὰ μεγέθη, ὡς δοκεῖ, τὰ αἰσθητὰ κεχωρισμένον, ἐν
τοῖς εἴδεσι τοῖς αἰσθητοῖς τὰ νοητά ἐστι, τά τε ἐν ἀφαι- 5
ρέσει λεγόμενα, καὶ ὅσα τῶν αἰσθητῶν ἕξεις καὶ πάθη.
καὶ διὰ τοῦτο οὔτε μὴ αἰσθανόμενος μηθὲν οὐθὲν ἂν μάθοι
οὐδὲ ξυνίοι· ὅταν τε θεωρῇ, ἀνάγκη ἅμα φαντάσματι
θεωρεῖν· τὰ γὰρ φαντάσματα ὥσπερ αἰσθήματά ἐστι,
πλὴν ἄνευ ὕλης. ἔστι δ' ἡ φαντασία ἕτερον φάσεως καὶ 10
ἀποφάσεως· συμπλοκὴ γὰρ νοημάτων ἐστὶ τὸ ἀληθὲς ἢ
ψεῦδος. τὰ δὲ πρῶτα νοήματα τίνι διοίσει τοῦ μὴ φαν-
τάσματα εἶναι; ἢ οὐδὲ τἆλλα φαντάσματα, ἀλλ' οὐκ ἄνευ
φαντασμάτων.

21. et 22. ex solo E ἐστιν· πάντα γὰρ ἢ scripsit Biehl, leg. etiam Soph. 138, 33 (ἢ in uno Soph. cod. A), ἐστι (τὰ X) πάντα. ἢ γὰρ (om. γὰρ L) αἰσθ. reliqui codd., etiam Them. Philop. 567, 17 vet. transl. Bek. Trend. Torst. Rodier, qui tamen pro puncto post πάντα colon posuit, ἐστι πάντα. πάντα γὰρ ἢ coni. Torst. || 22. δ'] δὴ E L, δὲ ἡ Them. Soph. || 24. <τρόπον τινὰ τῷ ἀνάγεσθαι> εἰς coni., vel potius interpr., Essen, Beitr. z. Lös. d. ar. Frage, p. 34, εἰς om. L Soph., insert. E_2 (Stapf.), ὡς coni. Susemihl, B. J. IX, 352, qui etiam ὡς pro 25. et 26. εἰς scribi vult, B. J. XXXIV, 30; cf. tamen Susem. ibid. XLII, 238, LXVII, 104, ὥσπερ καὶ τὰ πράγ. coni. Torst. || 25. ἡ prius rc. E in ras. || δυνάμεις et 26. ἐντελεχείας L et pr. E Torst. Biehl, τὰς δυνάμεις et τὰς ἐνεργείας Soph., τὰ δυνάμει et τὰ ἐντελεχείᾳ reliqui codd. omnes (praeterquam quod etiam S X τὰς ἐντελεχείας praebent), etiam Them. Simpl. Philop., qui τὰ ἐνεργείᾳ interpretantur, et vet. transl. Bullinger, Metakr. Gänge, p. 6, Nus-Lehre, p. 17 Susemihl, B. J. XXXIV, 30 Marchl, p. 18, εἰς δυνάμεις et εἰς ἐντελεχείας scribarum errore ex εἰς δυνάμει et εἰς ἐντελεχείᾳ (sc. πράγματα) orta esse suspicatur Christ || 27. τὸ om. E L S U V X, leg. Soph. || ταὐτόν E L Bek., ταὐτά corr. E_2 (Bhl.), scripsit Biehl in ed. alt., ταῦτα corr. E_2 (Rr.), ταῦτα etiam Soph. et vet. transl. || ἐπιστητὸν] ἐπιστημονικὸν S U V et 28. αἰσθητικόν S, unde ταῦτά ἐστι, τὸ μὲν ἐπιστημονικὸν τὸ ἐπιστητόν, τὸ δὲ αἰσθητικὸν τὸ αἰσθητόν scripsit Torst., τὸ μὲν <τὸ> ἐπιστητὸν τὸ δὲ <τὸ> αἰσθητόν coni. Hayduck, ἐπιστητῷ et

8 And now let us sum up what has been said concerning the soul by repeating that in a manner the soul is all existent things. For they are all either objects of sensation or objects of thought; and knowledge and sensation are in a manner identical with their respective objects. How this is so requires to be explained. Knowledge and sensation, then, are subdivided to correspond to the things. Potential knowledge and sensation answer to things which are potential, actual knowledge and sensation to things which are actual, while the sensitive and the cognitive faculties in the soul are potentially these objects; I mean, object of sensation and object of cognition respectively. It follows that the faculties must be identical, if not with the things themselves, then with their forms. The things themselves they are not, for it is not the stone which is in the soul, but the form of the stone. So that there is an analogy between the soul and the hand; for, as the hand is the instrument of instruments, so the intellect is the form of forms and sensation the form of sensibles. 3 But, since, apart from sensible magnitudes there is nothing, as it would seem, independently existent, it is in the sensible forms that the intelligible forms exist, both the abstractions of mathematics, as they are called, and all the qualities and attributes of sensible things. And for this reason, as without sensation a man would not learn or understand anything, so at the very time when he is actually thinking he must have an image before him. For mental images are like present sensations, except that they are immaterial. Imagination, however, is distinct from affirmation and negation, for it needs a combination of notions to constitute truth or falsehood. But, it may be asked, how will the simplest notions differ in character from mental images? I reply that neither these nor the rest of our notions are images, but that they cannot dispense with images.

Summary of results.

Nihil est in intellectu quod non prius in sensu.

αἰσθητῷ Chandler, τὸ μὲν τὸ ἐπιστητὸν τὸ δὲ τὸ αἰσθητὸν εἶδος Essen, p. 72, vulgatam tuetur etiam vet. transl. || 29. γὰρ ante δὴ S T U X Soph. Bek. Trend. Torst., om. etiam Philop. et vet. transl. || ὁ om. E L Them. Philop., leg. Soph. || 432 a, 2. νοῦς ἐστὶν S V y, νοῦς δὲ T W || εἶδος om. E, ἐστὶν εἶδος marg. E || 5. ἐν om. E L S U V Them. Philop., leg. Simpl. || 7. αἰσθανόμενον L et E (Trend.) || 8. ξυνίῃ L S X y Philop., ξυνίοι reliqui codd. Trend., ξυνείη Bek. Torst. || δὲ T U V || φαντάσματα S V W X, φαντάσματι E, ι in rasura, etiam Them. Philop., scripsit Biehl, reliqui ante Biehlium omnes φάντασμά τι, etiam Simpl. vet. transl. Bek. Trend. Torst. || 9. αἰσθήματά] αἰσθητά coni. Kampe, p. 101 || 10. et 11. καὶ ἀποφάσεως om. S U V, leg. etiam Soph. || 11. ἐστι νοημάτων S U V || 12. τίνι E L, reliqui τί, etiam Them. Philop. 569, 21 et ad 403 a, 8 (45, 22) || φάντασμα E, φαντάσματα etiam Them. Philop. || 13. τἆλλα] ταῦτα Them. 116, 18 (sed τἆλλα ex Arist. scripsit Hayduck) Ald. Torst. Freudenthal, p. 13, τἆλλα vel τὰ ἄλλα etiam Simpl. et Philop. 569, 28 et ad 403 a, 8 (45, 23).

9 Ἐπεὶ δὲ ἡ ψυχὴ κατὰ δύο ὥρισται δυνάμεις ἡ τῶν 15
ζῴων, τῷ τε κριτικῷ, ὃ διανοίας ἔργον ἐστὶ καὶ αἰσθήσεως,
καὶ ἔτι τῷ κινεῖν τὴν κατὰ τόπον κίνησιν, περὶ μὲν αἰσθή-
σεως καὶ νοῦ διωρίσθω τοσαῦτα, περὶ δὲ τοῦ κινοῦντος,
τί ποτέ ἐστι τῆς ψυχῆς, σκεπτέον, πότερον ἕν τι μόριον
αὐτῆς χωριστὸν ὂν ἢ μεγέθει ἢ λόγῳ, ἢ πᾶσα ἡ ψυχή, 20
κἂν εἰ μόριόν τι, πότερον ἴδιόν τι παρὰ τὰ εἰωθότα λέγε-
2 σθαι καὶ τὰ εἰρημένα, ἢ τούτων ἕν τι. ἔχει δὲ ἀπορίαν
εὐθὺς πῶς τε δεῖ μόρια λέγειν τῆς ψυχῆς καὶ πόσα.
τρόπον γάρ τινα ἄπειρα φαίνεται, καὶ οὐ μόνον ἅ τινες
λέγουσι διορίζοντες, λογιστικὸν καὶ θυμικὸν καὶ ἐπιθυμητι- 25
κόν, οἱ δὲ τὸ λόγον ἔχον καὶ τὸ ἄλογον· κατὰ γὰρ τὰς
διαφορὰς δι' ἃς ταῦτα χωρίζουσι, καὶ ἄλλα φανεῖται
μόρια μείζω διάστασιν ἔχοντα τούτων, περὶ ὧν καὶ νῦν εἴ-
ρηται, τό τε θρεπτικόν, ὃ καὶ τοῖς φυτοῖς ὑπάρχει καὶ
πᾶσι τοῖς ζῴοις, καὶ τὸ αἰσθητικόν, ὃ οὔτε ὡς ἄλογον οὔτε 30
3 ὡς λόγον ἔχον θείη ἄν τις ῥᾳδίως. ἔτι δὲ τὸ φανταστικόν,
ὃ τῷ μὲν εἶναι πάντων ἕτερον, τίνι δὲ τούτων ταὐτὸν ἢ ἕτε- 432b
ρον, ἔχει πολλὴν ἀπορίαν, εἴ τις θήσει κεχωρισμένα μό-
ρια τῆς ψυχῆς. πρὸς δὲ τούτοις τὸ ὀρεκτικόν, ὃ καὶ λόγῳ
καὶ δυνάμει ἕτερον ἂν δόξειεν εἶναι πάντων. καὶ ἄτοπον δὴ
τὸ τοῦτο διασπᾶν· ἔν τε τῷ λογιστικῷ γὰρ ἡ βούλησις γίνεται, 5
καὶ ἐν τῷ ἀλόγῳ ἡ ἐπιθυμία καὶ ὁ θυμός· εἰ δὲ τρία ἡ
4 ψυχή, ἐν ἑκάστῳ ἔσται ὄρεξις. καὶ δὴ καὶ περὶ οὗ νῦν ὁ
λόγος ἐνέστηκε, τί τὸ κινοῦν κατὰ τόπον τὸ ζῷόν ἐστιν; τὴν
μὲν γὰρ κατ' αὔξησιν καὶ φθίσιν κίνησιν, ἅπασιν ὑπάρχου-
σαν, τὸ πᾶσιν ὑπάρχον δόξειεν ἂν κινεῖν τὸ γεννητικὸν καὶ 10
θρεπτικόν· περὶ δὲ ἀναπνοῆς καὶ ἐκπνοῆς καὶ ὕπνου καὶ
ἐγρηγόρσεως ὕστερον ἐπισκεπτέον· ἔχει γὰρ καὶ ταῦτα πολ-
5 λὴν ἀπορίαν. ἀλλὰ περὶ τῆς κατὰ τόπον κινήσεως, τί τὸ

15. ἡ ante τῶν om. L et pr. E (Bus.) Soph. ‖ 20. ἢ post ὂν om. S U W Soph., leg. Simpl. ‖ 23. τε] ποτε W, om. L, τε leg. Soph. ‖ δεῖ] δὴ E (Trend.), δεῖ corr. E ‖ λέγειν ψυχῆς X, ψυχῆς λέγειν S T U V W y Soph. ‖ 27. ταύτας E L, ταῦτα etiam Soph. ‖ φαίνεται T U W X y, φαίνονται L S V, φανεῖται etiam Soph. ‖ 29. τε om. S T U V W X, δὲ y, τε etiam Soph. ‖ ὃ om. S U V, leg. Them. ‖ 30. ὃ om. U V ‖ 432 b, 1. ὃ om. E Them. 117, 15 Philop. 574, 22 in lemmate, leg. etiam Soph. ‖ τὸ E L, τῷ leg. Them. Soph. ‖ τινὶ Bek., τίνι etiam Philop. Soph. ‖ 4. πάντων om. W y, leg. etiam Them. Soph. ‖ καὶ ante ἄτοπον om. T U V W y ‖ δὴ τὸ τοῦτο] δὲ τοῦτο T V y, δὲ τὸ τοῦτο W, δὴ τὸ τοῦτο E Soph., artic. τὸ etiam Them. Simpl., reliqui ante Torst. omnes δὴ τοῦτο, etiam Bek. Trend., δὴ τὸ, uncis includens τοῦτο, Torst. ‖ 9. αὔξην E

9 The soul in animals has been defined in virtue of two faculties, not only by its capacity to judge, which is the function of thought and perception, but also by the local movement which it imparts to the animal. Assuming the nature of sensation and intellect to have been so far determined, we have now to consider what it is in the soul which initiates motion: whether it is some one part of the soul, which is either locally separable or logically distinct, or whether it is the whole soul: and again, if a separate part, whether it is a special part distinct from those usually recognised and from those enumerated above, or whether it coincides with some one of these. **2** A question at once arises in what sense it is proper to speak of parts of the soul and how many there are. For in one sense there appear to be an infinite number of parts and not merely those which some distinguish, the reasoning, passionate and concupiscent parts, for which others substitute the rational and the irrational. For, if we examine the differences on which they base their divisions, we shall find that there are other parts separated by a greater distance than these; namely, the parts which we have just discussed, the nutritive, which belongs to plants as well as to all animals, and the sensitive, which cannot easily be classed either as rational or irrational. **3** Imagination, again, is logically distinct from them all, while it is very difficult to say with which of the parts it is in fact identical or not identical, if we are to assume separate parts in the soul. Then besides these there is appetency, which would seem to be distinct both in concept and in capacity from all the foregoing. And surely it is absurd to split this up. For wish in the rational part corresponds to concupiscence and passion in the irrational. And, if we make a triple division of soul, there will be appetency in all three parts.

Animal locomotion.

Digression on the parts of the soul.

4 To come now to the question at present before us, what is it that imparts to the animal local movement? For as for the motion of growth and decay, which is found in all animals, it would seem that this must be originated by that part of soul which is found in all of them, the generative and nutritive part. Inspiration and expiration of breath, sleep and waking, subjects full of difficulty, call for subsequent enquiry. **5** But to return to locomotion, we must enquire what it is that imparts

(Trend.), *αὔξησιν* etiam in interpret. Them. Philop. Soph. || *ἄπασιν ὑπάρχουσαν* E et Soph., *ἡ πᾶσιν ὑπάρχουσα* W, *αἱ πᾶσιν ὑπάρχουσι* reliqui codd. || 10. *καὶ θρεπτικόν* om. E L, leg. etiam Them. Soph., *καὶ τὸ θρ.* S || 11. *καὶ* ante *ὕπνου* om. E || 13. *τί* om. E, leg. etiam Them. Soph.

κινοῦν τὸ ζῷον τὴν πορευτικὴν κίνησιν, σκεπτέον. ὅτι μὲν οὖν
οὐχ ἡ θρεπτικὴ δύναμις, δῆλον· ἀεί τε γὰρ ἕνεκά του ἡ κίνησις 15
αὕτη, καὶ ἢ μετὰ φαντασίας ἢ ὀρέξεώς ἐστιν· οὐθὲν γὰρ
μὴ ὀρεγόμενον ἢ φεῦγον κινεῖται ἀλλ' ἢ βίᾳ. ἔτι κἂν τὰ
φυτὰ κινητικὰ ἦν, κἂν εἶχέ τι μόριον ὀργανικὸν πρὸς τὴν
6 κίνησιν ταύτην. ὁμοίως δὲ οὐδὲ τὸ αἰσθητικόν· πολλὰ γάρ
ἐστι τῶν ζῴων ἃ αἴσθησιν μὲν ἔχει, μόνιμα δ' ἐστὶ καὶ ἀκί- 20
νητα διὰ τέλους. εἰ οὖν ἡ φύσις μήτε ποιεῖ μάτην μηθὲν
μήτε ἀπολείπει τι τῶν ἀναγκαίων, πλὴν ἐν τοῖς πηρώμασι
καὶ ἐν τοῖς ἀτελέσιν· τὰ δὲ τοιαῦτα τῶν ζῴων τέλεια καὶ
οὐ πηρώματά ἐστιν· σημεῖον δ' ὅτι ἔστι γεννητικὰ καὶ ἀκμὴν
ἔχει καὶ φθίσιν· ὥστ' εἶχεν ἂν καὶ τὰ ὀργανικὰ μέρη τῆς 25
7 πορείας. ἀλλὰ μὴν οὐδὲ τὸ λογιστικὸν καὶ ὁ καλούμενος νοῦς
ἐστὶν ὁ κινῶν· ὁ μὲν γὰρ θεωρητικὸς οὐθὲν νοεῖ πρακτόν, οὐδὲ
λέγει περὶ φευκτοῦ καὶ διωκτοῦ οὐθέν, ἀεὶ δὲ ἡ κίνησις ἢ φεύγον-
τος ἢ διώκοντός τί ἐστιν. ἀλλ' οὐδ' ὅταν θεωρῇ τι τοιοῦτον,
ἤδη κελεύει διώκειν ἢ φεύγειν, οἷον πολλάκις διανοεῖται 30
φοβερόν τι ἢ ἡδύ, οὐ κελεύει δὲ φοβεῖσθαι, ἡ δὲ καρδία
8 κινεῖται, ἂν δ' ἡδύ, ἕτερόν τι μόριον. ἔτι καὶ ἐπιτάττοντος 433a
τοῦ νοῦ καὶ λεγούσης τῆς διανοίας φεύγειν τι ἢ διώκειν οὐ κι-
νεῖται, ἀλλὰ κατὰ τὴν ἐπιθυμίαν πράττει, οἷον ὁ ἀκρατής.
καὶ ὅλως δὲ ὁρῶμεν ὅτι ὁ ἔχων τὴν ἰατρικὴν οὐκ ἰᾶται, ὡς
ἑτέρου τινὸς κυρίου ὄντος τοῦ ποιεῖν κατὰ τὴν ἐπιστήμην, ἀλλ' 5
οὐ τῆς ἐπιστήμης. ἀλλὰ μὴν οὐδ' ἡ ὄρεξις ταύτης κυρία τῆς
κινήσεως· οἱ γὰρ ἐγκρατεῖς ὀρεγόμενοι καὶ ἐπιθυμοῦντες οὐ
πράττουσιν ὧν ἔχουσι τὴν ὄρεξιν, ἀλλ' ἀκολουθοῦσι τῷ νῷ.

15. *τε* E T, om. reliqui codd., leg. etiam Philop. 581, 39 Soph. || *ἡ* ante *κίνησις* om. pr. E (Trend.) || 16. *ἢ* post *καὶ* om. S W Soph., leg. Philop. Simpl. || 21. *διὰ τέλους*] *διατελεῖ* W y || *εἰ οὖν...μηθὲν*] hic variant S V W X, vulgatam tuentur etiam Simpl. Soph. || 22. *τι* E V, om. reliqui codd. et Simpl., leg. etiam Them. Philop. Soph. || 23. *ἐν* om. L T V Them. Simpl., leg. etiam Soph. || 24. *ἔστι* solus E, om. reliqui codd., etiam Them. Soph. || 27. *κινῶν*] *ἐκείνων* pr. E || *θεωρεῖ* E L et, ut videtur, Them. 118, 9, *νοεῖ* legisse videtur etiam Soph. 141, 4 || 28. *ἡ δὲ* W Bek. Trend. Torst., *ἀεὶ δὲ ἡ* S T U V X y et vet. transl., *ἡ* insert. E_2 (Bhl.) || *φεύγοντός τι ἢ διώκ. τί* omnes libri et scripti et ante Biehlium impressi exceptis E et Soph., *τι* prius om. Biehl || 30. *φεύγειν ἢ διώκειν*, exceptis E L et vet. transl., omnes scripti et ante Biehlium impressi || 31. *τι φοβερὸν* T U V || *φοβεῖσθαι· ἡ δέ γε καρδία* coni. Torst. || 433 a, 3. *πράττειν* E (Trend.) et y || *ὁ* om. S T U X y, leg. Them. || 4. *ὁ* om. L, leg. Them. Soph. || *τὴν* om. T W, leg. Them. Soph. || *οὐκ* expellendum esse censet Christ.

to the animal progressive motion. That it is not the nutritive faculty is clear. For this motion is always directed to an end and is attended either by imagination or by appetency. No animal, which is not either seeking or avoiding something, moves except under compulsion. Moreover, if it were the nutritive faculty, plants also would be capable of locomotion and thus would have some part instrumental in producing this form of motion. Similarly it is not 6 the sensitive faculty, since there are many animals which have sensation and yet are throughout their lives stationary and motionless. If, then, nature does nothing in vain and, except in mutilated and imperfect specimens, omits nothing that is indispensable, while the animals we are considering are fully developed and not mutilated—as is shown by the fact that they propagate their kind and have a period of maturity and a period of decline,—it follows that, if locomotion was implied in sensation, they would have had the parts instrumental to progression. Nor, 7 again, is it the reasoning faculty or what is called intellect that is the cause of motion. For the speculative intellect thinks nothing that is practical and makes no assertion about what is to be avoided or pursued, whereas motion always implies that we are avoiding or pursuing something. But, even if the mind has something of the kind before it, it does not forthwith prompt avoidance or pursuit. For example, it often thinks of something alarming or pleasant without prompting to fear; the only effect is a beating of the heart or, when the thought is pleasant, some other bodily movement. Besides, even if the intellect issues the order and 8 the understanding bids us avoid or pursue something, still we are not thereby moved to act: on the contrary, action is determined by desire; in the case, for instance, of the incontinent man. And generally we see that, although a man possesses a knowledge of medicine, it does not follow that he practises; and this implies that there is something else apart from the knowledge which determines action in accordance with the knowledge. Nor, again, is it solely appetency on which this motion depends. The continent, though they feel desire, that is appetite, do not act as their desires prompt, but on the contrary obey reason.

The cause of locomotion not the nutritive faculty, nor sense, nor intellect, nor appetency solely.

10 Φαίνεται δέ γε δύο ταῦτα <τὰ> κινοῦντα, ἢ ὄρεξις ἢ νοῦς, εἴ
τις τὴν φαντασίαν τιθείη ὡς νόησίν τινα· πολλὰ γὰρ παρὰ 10
τὴν ἐπιστήμην ἀκολουθοῦσι ταῖς φαντασίαις, καὶ ἐν τοῖς ἄλ-
λοις ζῴοις οὐ νόησις οὐδὲ λογισμός ἐστιν, ἀλλὰ φαντασία.
ἄμφω ἄρα ταῦτα κινητικὰ κατὰ τόπον, νοῦς καὶ ὄρεξις,
2 νοῦς δὲ ὁ ἕνεκά του λογιζόμενος καὶ ὁ πρακτικός· διαφέρει
δὲ τοῦ θεωρητικοῦ τῷ τέλει. καὶ ἡ ὄρεξις ἕνεκά του πᾶσα· οὗ 15
γὰρ ἡ ὄρεξις, αὕτη ἀρχὴ τοῦ πρακτικοῦ νοῦ· τὸ δ' ἔσχατον
ἀρχὴ τῆς πράξεως. ὥστε εὐλόγως ταῦτα δύο φαίνεται τὰ
κινοῦντα, ὄρεξις καὶ διάνοια πρακτική· τὸ ὀρεκτὸν γὰρ κι-
νεῖ, καὶ διὰ τοῦτο ἡ διάνοια κινεῖ, ὅτι ἀρχὴ αὐτῆς ἐστὶ τὸ
3 ὀρεκτόν. καὶ ἡ φαντασία δὲ ὅταν κινῇ, οὐ κινεῖ ἄνευ ὀρέ- 20
ξεως. ἓν δή τι τὸ κινοῦν τὸ ὀρεκτικόν. εἰ γὰρ δύο, νοῦς καὶ
ὄρεξις, ἐκίνουν, κατὰ κοινὸν ἄν τι ἐκίνουν εἶδος. νῦν δὲ ὁ μὲν
νοῦς οὐ φαίνεται κινῶν ἄνευ ὀρέξεως· ἡ γὰρ βούλησις ὄρεξις·
ὅταν δὲ κατὰ τὸν λογισμὸν κινῆται, καὶ κατὰ βούλησιν κι-
νεῖται. ἡ δ' ὄρεξις κινεῖ παρὰ τὸν λογισμόν· ἡ γὰρ ἐπιθυ- 25
4 μία ὄρεξίς τίς ἐστιν. νοῦς μὲν οὖν πᾶς ὀρθός ἐστιν· ὄρεξις
δὲ καὶ φαντασία καὶ ὀρθὴ καὶ οὐκ ὀρθή. διὸ ἀεὶ κινεῖ μὲν
τὸ ὀρεκτόν, ἀλλὰ τοῦτ' ἐστὶν ἢ τὸ ἀγαθὸν ἢ τὸ φαινόμενον
ἀγαθόν· οὐ πᾶν δέ, ἀλλὰ τὸ πρακτὸν ἀγαθόν. πρακτὸν δ'
ἐστὶ τὸ ἐνδεχόμενον καὶ ἄλλως ἔχειν. 30

5 ὅτι μὲν οὖν ἡ τοιαύτη δύναμις κινεῖ τῆς ψυχῆς ἡ καλουμέ-
νη ὄρεξις, φανερόν. τοῖς δὲ διαιροῦσι τὰ μέρη τῆς ψυχῆς, 433b
ἐὰν κατὰ τὰς δυνάμεις διαιρῶσι καὶ χωρίζωσι, πάμπολλα γίνεται,

9. *ταῦτα δύο* E L, *δύο ταῦτα* etiam Them. Soph. et vet. transl., post *ταῦτα* addendum *τὰ* coni. Bywater, p. 64, <*τὰ*> recepi ‖ 10. *θείη* W Philop. ‖ *πολλὰ*] *πολλοὶ* coni. Bywater, cui assentitur Susemihl, B. J. LXVII, 110 ‖ 12. *οὐ νόησις*] *βούλησις* videtur habuisse pr. E(?) (Rr.) ‖ *οὐ*] *οὐχ ἡ* L, *ἡ* S T V X Essen III, p. 56 ‖ *οὐδὲ*] *οὐ* T V X et pr. E Essen, vulgatam utrobique tuentur Simpl. Philop. ‖ 14. colon post *πρακτικός* sustulit et 15. *δὲ* unc. incl. Essen III, p. 56 ‖ 15. *οὗ γὰρ*...16. *νοῦ* post., 18. *τὸ ὀρεκτὸν*...20. *ὀρεκτόν* pr. edit. esse iudicat Torst., quod negat Noetel, p. 540, et refellit Pansch, Philologus XXI, p. 543, qui, ut Torstrikii contaminationem evitet, legendum proponit: *οὐ γὰρ ἡ ὄρεξις αὐτή* ‖ 16. *αὐτὴ* X ‖ 17. *δύο ταῦτα* S T U V X y Them. ‖ *τὰ* om. E, insert. E_2 ‖ 18. *διάν. ἡ πρ.* T X ‖ *ὀρεκτὸν* E Them. vet. transl., ceteri codd. *ὀρεκτικὸν* ‖ 20. *ὀρεκτόν* E L Them. vet. transl., reliqui codd. *ὀρεκτικόν* ‖ *κινεῖ* om. pr. E (Trend.) ‖ 21. *τὸ* ante *κινοῦν* unc. incl. Essen III, p. 57 ‖ *ὀρεκτόν* E L W Them. et fort. Philop. 585, 17 (cf. Hayducki ap. crit. ad loc.), et *ὀρεκτόν* et *ὀρεκτικόν* legi commemorat Simpl. 297, 31 sq., *ὀρεκτικόν* corr. E_2 et Torst., *ὀρεκτόν* defendere studet Pansch, l. l., cui assentitur Belger in alt. ed. Trend. ‖ 22. *εἶδος ἐκίνουν* S U V W X y et Simpl., *εἶδος* secludendum esse coni. Torst. ‖ post *νῦν δὲ* addendum *ἐπεὶ* censet Essen, l. l. ‖ 25. *κινεῖ καὶ* Philop. et

Appetency, how related to practical intellect.

The motive causes are apparently, at any rate, these two, either **10** appetency or intelligence, if we regard imagination as one species of thinking. For men often act contrary to knowledge in obedience to their imaginings, while in the other animals there is no process of thinking or reasoning, but solely imagination. Both these, then, are causes of locomotion, intelligence and appetency. By intelligence we mean that 2 which calculates the means to an end, that is, the practical intellect, which differs from the speculative intellect by the end at which it aims. Appetency, too, is directed to some end in every case: for that which is the end of desire is the starting point of the practical intellect, and the last stage in this process of thought is the starting point of action. Hence there is good reason for the view that these two are the causes of motion, appetency and practical thought. For it is the object of appetency which causes motion; and the reason why thought causes motion is that the object of appetency is the starting point of thought. Again, when imagination moves to 3 action, it does not move to action apart from appetency. Thus there is one single moving cause, the appetitive faculty. For, had there been two, intelligence and appetency, which moved to action, still they would have done so in virtue of some character common to both. But, as a matter of fact, intellect is not found to cause motion apart from appetency. For rational wish is appetency; and, when anyone is moved in accordance with reason, he is also moved according to rational wish. But appetency may move a man in opposition to reason, for concupiscence is a species of appetency. While, however, intellect is always right, appetency and imagina- 4 tion may be right or wrong. Hence it is invariably the object of appetency which causes motion, but this object may be either the good or the apparent good. Not all good, however, but practical good: where by practical good we mean something which may not be good under all circumstances.

It is evident, then, that motion is due to the faculty of the 5 soul corresponding to this object—I mean what is known as appetency. But those who divide the soul into parts, if they divide it according to its powers and separate these from one another, will find that such parts tend to become very numerous: nutritive,

fort. Them. 119, 13 sq., scripsit Torst. || 26. νοῦς μὲν...ἐστιν unc. incl. Essen III, p. 57 || 26. ὀρθός ἐστιν· ὀρ. et 27. μὲν κινεῖ S T U V W X y, ὀρθός ἐστιν etiam E_2 (Bhl.), κινεῖ μὲν etiam Them., om. ἐστιν Bek. Trend. Torst. || 27. καὶ φαντασία] κατὰ φαντασίαν coni. Essen, l. l. || 31. κινεῖ] κοινή W Essen, l. l. || 433 b, 1. τοῖς δὲ διαιροῦσι...4. θυμικόν alieno loco inserta iudicat Torst., p. 216 || τὰ μέρη τῆς ψυχῆς sive post κατὰ transponenda sive delenda censet Essen III, p. 58.

θρεπτικόν, αἰσθητικόν, νοητικόν, βουλευτικόν, ἔτι ὀρεκτικόν· ταῦτα γὰρ πλέον διαφέρει ἀλλήλων ἢ τὸ ἐπιθυμητικὸν καὶ θυμι-
6 κόν. ἐπεὶ δ' ὀρέξεις γίνονται ἐναντίαι ἀλλήλαις, τοῦτο δὲ 5
συμβαίνει ὅταν ὁ λόγος καὶ αἱ ἐπιθυμίαι ἐναντίαι ὦσι, γίνεται δ' ἐν τοῖς χρόνου αἴσθησιν ἔχουσιν (ὁ μὲν γὰρ νοῦς διὰ τὸ μέλλον ἀνθέλκειν κελεύει, ἡ δ' ἐπιθυμία διὰ τὸ ἤδη· φαίνεται γὰρ τὸ ἤδη ἡδὺ καὶ ἁπλῶς ἡδὺ καὶ ἀγαθὸν ἁπλῶς, διὰ τὸ μὴ ὁρᾶν τὸ μέλλον), εἴδει μὲν ἓν ἂν εἴη τὸ κινοῦν τὸ 10
ὀρεκτικόν, ᾗ ὀρεκτικόν, πρῶτον δὲ πάντων τὸ ὀρεκτόν (τοῦτο γὰρ κινεῖ οὐ κινούμενον τῷ νοηθῆναι ἢ φαντασθῆναι), ἀριθμῷ
7 δὲ πλείω τὰ κινοῦντα. ἐπειδὴ δ' ἐστὶ τρία, ἓν μὲν τὸ κινοῦν, δεύτερον δ' ᾧ κινεῖ, ἔτι τρίτον τὸ κινούμενον· τὸ δὲ κινοῦν διττόν, τὸ μὲν ἀκίνητον, τὸ δὲ κινοῦν καὶ κινούμενον· ἔστι δὲ τὸ μὲν 15
ἀκίνητον τὸ πρακτὸν ἀγαθόν, τὸ δὲ κινοῦν καὶ κινούμενον τὸ ὀρεκτικόν (κινεῖται γὰρ τὸ κινούμενον ᾗ ὀρέγεται, καὶ ἡ ὄρεξις κίνησίς τίς ἐστιν ἢ ἐνέργεια), τὸ δὲ κινούμενον τὸ ζῷον· ᾧ δὲ κινεῖ ὀργάνῳ ἡ ὄρεξις, ἤδη τοῦτο σωματικόν ἐστιν· διὸ ἐν τοῖς κοινοῖς σώματος καὶ ψυχῆς ἔργοις θεωρητέον περὶ 20
8 αὐτοῦ. νῦν δὲ ὡς ἐν κεφαλαίῳ εἰπεῖν, τὸ κινοῦν ὀργανικῶς ὅπου ἀρχὴ καὶ τελευτὴ τὸ αὐτό, οἷον ὁ γιγγλυμός· ἐνταῦθα γὰρ τὸ κυρτὸν καὶ τὸ κοῖλον τὸ μὲν τελευτὴ τὸ δ' ἀρχή· διὸ τὸ μὲν ἠρεμεῖ τὸ δὲ κινεῖται, λόγῳ μὲν ἕτερα ὄντα, μεγέθει δ' ἀχώριστα· πάντα γὰρ ὤσει καὶ ἕλξει κι- 25
νεῖται. διὸ δεῖ ὥσπερ ἐν κύκλῳ μένειν τι, καὶ ἐντεῦθεν ἄρ-

3. *νοητικόν* unc. incl. Essen, l. l. || *βουλευτικόν τι* coni. Essen, l. l. || *ἔτι δὲ* STUVWX, *δὲ* insert. E$_2$, *δὲ* om. Simpl. || 4. *πλεῖον* LSU, *πλείω* TVWXy Them. || *ἀλλήλων ἢ*] *ἢ ἀλλήλων* in interpr. Simpl. 299, 16 || *τὸ* om. L et E (Trend.) || 5. *γίν. καὶ ἐν.* SUV Them., *καὶ* om. etiam Soph. et, ut videtur, Philop. 586, 18. 21. 23 || 6. *ὅταν ὁ τε λόγος καὶ αἱ ἐπιθυμίαι* E (Bhl.) || 8. *ἀνθέλκει, κελεύει δ' ἡ* coni. Essen III, p. 60 || 9. *ἤδη* insert. E$_2$, leg. sine dubio Them. || 10. *μὲν*] *μὲν οὖν* insert. E$_2$ (Rr.), *μὲν οὖν* TVXy Them., *μὲν ὁ* W, *οὖν* om. etiam Simpl. || *ἂν εἴη ἓν* SUW, *ἂν ἓν εἴη* Simpl. || 11. parenthesin a *πρῶτον* ordiendam putat Bywater, p. 64, cui assentitur Susemihl, B. J. LXVII, 110 || 13. *ἐπεὶ* Ey Simpl., *ἐπειδὴ* etiam Philop. et ap. Philop. Alex. et Plut. Athen. || 14. *ἔτι τρίτον* E (Trend.) LS Torst., *καὶ ἔτι τρίτον* TXy Philop., *ἔτι* om. UVW Bek. Trend. || 15. *κινοῦν καὶ* om. E, leg. etiam Them. Simpl. Philop. || *δὲ*] *δὴ* coni. Susemihl, Oecon. p. 86 || 16. *τὸ* post *κιν.* om. ELSUV || 17. *ὀρεκτόν* corr. E (Trend.) || *ὀρεγόμενον* TXy vet. transl. Torst. Belger in alt. ed. Trend. Biehl, *κινοῦν* sine dubio Philop. 591, 12 (v. quae ad loc. adnotavit Hayduck), reliqui *κινούμενον*, etiam Simpl. Bek. Trend., quibus assentitur Pansch, p. 545 || 18. *κίνησις ὄρεξις* EL et, ut videtur, Them. 120, 31 sq. Bek., *ὄρεξις κίνησις* etiam Simpl. vet. transl. Trend. Torst., *ὄρεξις ἡ κίνησις* Philop. || *τίς* om. TWXy, leg. Simpl. || *ἡ ἐνέργεια* E (Bek. Stapf.), *ἡ ἐνέργεια* E (Bhl.), *ἢ ἐνέργεια* U Philop. Rodier, *καὶ ἐνέργεια* Them., *ἢ ἐνέργεια* Bek. Trend., etiam

sensitive, intelligent, deliberative, with the further addition of an appetent part: for these differ more widely from one another than the concupiscent does from the passionate. Now desires arise 6 which are contrary to one another, and this occurs whenever reason and the appetites are opposed, that is, in those animals which have a perception of time. For intelligence bids us resist because of the future, while appetite has regard only to the immediate present; for the pleasure of the moment appears absolutely pleasurable and absolutely good because we do not see the future. Therefore, while generically the moving cause will be one, namely, the faculty of appetency, as such, and ultimately the object of appetency (which, without being in motion itself, causes motion by the mere fact of being thought of or imagined), numerically there is a plurality of moving causes.

Conflict of desires.

Now motion implies three things, first, that which causes motion, 7 secondly, that whereby it causes motion, and again, thirdly, that which is moved; and of these that which causes motion is twofold, firstly, that which is itself unmoved and, secondly, that which both causes motion and is itself moved. The unmoved movent is the practical good, that which is moved and causes motion is the appetitive faculty (for the animal which is moved is moved in so far as it desires, and desire is a species of motion or activity) and, finally, the thing moved is the animal. But the instrument with which desire moves it, once reached, is a part of the body: hence it must be dealt with under the functions common to body and soul. For the present, 8 it may be enough to say summarily that we find that which causes motion by means of organs at the point where beginning and end coincide; as, for instance, they do in the hinge-joint, for there the convex and the concave are respectively the end and the beginning, with the result that the latter is at rest, while the former moves, convex and concave being logically distinct, but locally inseparable. For all animals move by pushing and pulling, and accordingly there must be in them a fixed point, like the centre in

How the animal moves.

Simpl., qui tamen et ἡ ἐνεργ. scribi (immo, id quod H scribebatur legi) posse dicit, ἡ ἐνεργείᾳ scripsit Torst., εἰς ἐνέργειαν coni. Chaignet, p. 433 || 21. αὐτῶν E (Trend.) y, etiam, nisi fallor, L U V W, quorum scripturam errore, ut videtur, typographico, Bek. αὑτῶν esse rettulit, αὑτοῦ etiam Them. Soph. et, ut videtur, Simpl. 303, 15 sq. || 22. ὅπου ἂν ἀρχὴ E W Soph. || γινγλυμός E et Trend., γιγλυμός X, γιγλυσμός S T V, γιγγλισμός U W X, γιγγλυσμός Soph., γίγγλυμος Simpl. Philop. et ap. Simpl. Alex. et Plut. Athen., γιγγλυμός Them. (v. l. γιγγλυσμός) Bek. Torst. || 23. καὶ τὸ κοῖλον X et rc. E (Bus.) Soph., recepit Biehl, reliqui ante Biehlium omnes om. τὸ, etiam Bek. Trend. Torst. || γὰρ ante τελευτὴ insert. E_2 (Rr.) || 24. διὸ...κινεῖται in parenth. et post 25. ἀχώριστα punctum posuit Bywater, p. 64, cui assentitur Susemihl, B. J. LXVII, 110.

9 χεσθαι τὴν κίνησιν. ὅλως μὲν οὖν, ὥσπερ εἴρηται, ᾗ ὀρεκτικὸν
τὸ ζῷον, ταύτῃ ἑαυτοῦ κινητικόν· ὀρεκτικὸν δὲ οὐκ ἄνευ φαν-
τασίας· φαντασία δὲ πᾶσα ἢ λογιστικὴ ἢ αἰσθητική. ταύ-
της μὲν οὖν καὶ τὰ ἄλλα ζῷα μετέχει. 30

11 Σκεπτέον δὲ καὶ περὶ τῶν ἀτελῶν, τί τὸ κινοῦν ἐστίν,
οἷς ἁφὴ μόνον ὑπάρχει αἴσθησις, πότερον ἐνδέχεται φαν- 434
τασίαν ὑπάρχειν τούτοις, ἢ οὔ, καὶ ἐπιθυμίαν. φαίνεται γὰρ
λύπη καὶ ἡδονὴ ἐνοῦσα. εἰ δὲ ταῦτα, καὶ ἐπιθυμίαν ἀνάγκη.
φαντασία δὲ πῶς ἂν ἐνείη; ἢ ὥσπερ καὶ κινεῖται ἀορίστως,
2 καὶ ταῦτ' ἔνεστι μέν, ἀορίστως δ' ἔνεστιν. ἡ μὲν οὖν αἰσθητικὴ 5
φαντασία, ὥσπερ εἴρηται, καὶ ἐν τοῖς ἄλλοις ζῴοις ὑπάρ-
χει, ἡ δὲ βουλευτικὴ ἐν τοῖς λογιστικοῖς (πότερον γὰρ πρά-
ξει τόδε ἢ τόδε, λογισμοῦ ἤδη ἐστὶν ἔργον· καὶ ἀνάγκη ἑνὶ
μετρεῖν· τὸ μεῖζον γὰρ διώκει. ὥστε δύναται ἓν ἐκ πλειό-
νων φαντασμάτων ποιεῖν). καὶ αἴτιον τοῦτο τοῦ δόξαν μὴ δο- 10
κεῖν ἔχειν, ὅτι τὴν ἐκ συλλογισμοῦ οὐκ ἔχει, αὕτη δὲ ἐκεί-
3 νην. διὸ τὸ βουλευτικὸν οὐκ ἔχει ἡ ὄρεξις· νικᾷ δ' ἐνίοτε
καὶ κινεῖ τὴν βούλησιν, ὁτὲ δ' ἐκείνη ταύτην, ὥσπερ σφαῖρα, ἡ
ὄρεξις τὴν ὄρεξιν, ὅταν ἀκρασία γένηται· φύσει δὲ ἀεὶ ἡ
ἄνω ἀρχικωτέρα καὶ κινεῖ· ὥστε τρεῖς φορὰς ἤδη κινεῖσθαι. 15

28. ἑαυτοῦ V Them., δ' αὑτοῦ E L Soph., reliqui ante Biehlium omnes αὑτοῦ || 31. καὶ om. E, leg. Soph. || ἀτελῶν etiam Them. Simpl. Soph., ἄλλων L, ἁπλῶν y || 434 a, 1. αἰσθ.] ἡ αἴσθησις E, ἢ αἴσθησις L, ἁφὴ μόνη αἴσθησις ὑπάρχει Simpl. || 2. καὶ ἐπιθυμίαν unc. incl. Essen || 3. ἔχουσα E, ἐνοῦσα etiam Them. || 4. εἴη L S U V W || ἢ om. E S || ἀόριστος exceptis E S reliqui codd. omnes, ἀορίστως etiam Them. || 5. τούτοις L X et, ut videtur, Philop. 592, 26 Soph. 144, 37, ταῦτ' reliqui et corr. E || ἀόριστος y et fort. Simpl. in interpr. 307, 24. 308, 3 Soph. 144, 38, ἀορίστως etiam Them. 122, 11 Philop. || 6. φαντασία] ὄρεξις coni. Essen III, p. 62 || ἀλόγοις T W y Them. 121, 21, ἄλλοις etiam Simpl. in lemmate 308, 2 et, ut videtur, Philop. 592, 22: cf. tamen τὰ ἄλογα 593, 5 || 7. ἡ δὲ βουλευτικὴ...10. ποιεῖν in parenth. posuit Rodier || 7. πότερον...10. ποιεῖν in parenth. posui || 7. λογικοῖς W X y || 8. ἐστιν ἤδη L || ἔργον ἐστίν y || ἀνάγκη ἀεὶ μετρεῖν ἑνὶ W, vulgatam tuentur etiam Them. 121, 24 Philop. in interp. 592, 30 || 8. καὶ ἀνάγκη...11. ἐκείνην unc. incl. Essen || 9. πλεόνων E, πλειόνων Them. Simpl. Philop. || 10. καὶ αἴτιον...12. ὄρεξις mutila vel corrupta esse censet Torst., leg. Simpl. Philop. et, ut videtur, Them. 121, 29 sqq. || 10. τοῦτο τοῦ] τούτου τὸ corr. E_2 (Rr.), quod legisse videtur Philop. in interpr. 593, 4 || 11. post οὐκ ἔχει add. <τἆλλα ζῷα> et αὕτη δὲ ἐκείνην hoc loco delevit Bywater, αὕτη δὲ κινεῖ, coll. a, 19, coni. Cornford || 12. διὸ <ἢ> τὸ βουλευτικὸν...νικᾷ [δ'] ἐνίοτε...βούλησιν, [ὁτὲ δ' ἐκείνη ταύτην] ὥσπερ σφαῖρα <σφαῖραν> coni. Essen III, p. 62 || 13. τὴν βούλησιν om. S V W || post βούλησιν colon vulg. || ὁτὲ δὲ κινεῖ γ' αὐτήν pro ὁτὲ δ' ἐκείνη ταύτην coni. Cornford || σφαῖραν y || 13 et 14. ἡ δ' ὄρεξις τὴν ὄρ. coni. Trend., ἢ ἡ ὄρεξις τὴν ὄρ. coni. Chandler, totum locum sic restituendum esse: νικᾷ δ' ἐνίοτε καὶ κ. τ. βούλησιν, ὅταν ἀκρασία γένηται· ὁτὲ δ' ἐκείνη ταύτην· ὁτὲ δ', ὥσπερ σφαῖραν σφαῖρα, ἡ ὄρ. τὴν ὄρ. coni. Torst., νικᾷ δ' ἐν. καὶ κ. τ. β., ὅταν ἀκρ. γ., ὁτὲ ἐκείνη ταύτην, ἡ

a circle, and from this the motion must begin. Thus, then, in 9 general terms, as already stated, the animal is capable of moving itself just in so far as it is appetitive: and it cannot be appetitive without imagination. Now imagination may be rational or it may be imagination of sense. Of the latter the other animals also have a share.

11

The lowest forms of life, how moved.

We must also consider what is the moving cause in those imperfect animals which have only the sense of touch. Is it possible that they should have imagination and desire, or is it not? It is evident that they feel pleasure and pain: and, if they have these, then of necessity they must also feel desire. But how can they have imagination? Shall we say that, as their movements are vague and indeterminate, so, though they have these faculties, they have them in a vague and indeterminate form?

Deliberative imagination.

The imagination of sense, then, as we 2 have said, is found in the other animals also, but deliberative imagination in those alone which have reason.—For the task of deciding whether to do this or that already implies reasoning. And the pursuit of the greater good necessarily implies some single standard of measurement. Hence we have the power of constructing a single image out of a number of images.—And the reason why the lower animals are thought not to have opinion is that they do not possess that form of imagination which comes from inference, while the latter implies the former. And so ap- 3 petency does not imply the deliberative faculty. But sometimes it overpowers rational wish and moves to action; at other times the latter, rational wish, overpowers the former, appetency. Thus one appetency prevails over another appetency, like one sphere over another sphere, in the case where incontinence has supervened. But by nature the upper sphere always has the predominance and is a moving cause, so t ıat the motion is actually the resultant of three orbits.

ὄρεξις τὴν ὄρ. coni. Steinhart, *βούλησιν ὥσπερ σφαῖρα <ὁτὲ μὲν αὕτη ἐκείνην> ὁτὲ δ' ἐκείνη ταύτην ἡ ὄρεξις τὴν ὄρ.* coni. Bywater, p. 67: cf. ad a, 11, *ὁτὲ δ' ἐκείνη ταύτην, ὥσπερ <ἡ ἄνω> σφαῖρα <τὴν κάτω, ὁτὲ δ'> ἡ ὄρεξις τὴν ὄρ. ὅταν ἀκρ. γ. (φύσει δὲ ἀεὶ ἡ ἄνω ἀρχικ. καὶ κιν.), ὥστε* coni. Zeller, p. 587, adn. 4, *φύσει δὲ ἀεὶ ἡ ἄνω ἀρχικ.· καὶ κινεῖ ἡ ὄρ. τὴν ὄρ. ὅταν ἀκρασία γέν., ὥστε* coni. Busse, Hermes XXIII, 469 sq., *νικᾷ δ' ἐνίοτε καὶ κινεῖ τὴν βούλησιν, ὁτὲ δ' ἐκείνη ταύτην, ὥσπερ ἡ ἄνω σφαῖρα (φύσει δὲ ἀεὶ ἡ ἄνω ἀρχ. καὶ κιν.) ὁτὲ δ' ἡ ὄρ. τὴν ὄρ., ὅταν ἀκολασία γένηται· ὥστε* coni. Susemihl, B. J. LXVII, 11, vulgatam Rodier et certe Simpl. et vet. transl., vulgatam legisse videntur etiam Them. 121, 33 sqq. Soph. 145, 11 sqq., *<ὁτὲ δ'>* ante *ὥσπερ* de coniect. inseruit Biehl ‖ 14. *ἐνῇ* E L, etiam Philop. 593, 12, v. Haydücki ap. crit. ad loc., *γένηται* corr. E_2 ‖ 15. *ὥστε κατὰ τρεῖς διαφορὰς* coni. Essen III, p. 63.

4 τὸ δ' ἐπιστημονικὸν οὐ κινεῖται, ἀλλὰ μένει. ἐπεὶ δ' ἡ μὲν καθόλου ὑπόληψις καὶ λόγος, ἡ δὲ τοῦ καθ' ἕκαστα (ἡ μὲν γὰρ λέγει ὅτι δεῖ τὸν τοιοῦτον τὸ τοιόνδε πράττειν, ἡ δὲ ὅτι τόδε τοίνυν τοιόνδε, κἀγὼ δὲ τοιόσδε), ἤδη αὕτη κινεῖ ἡ δόξα, οὐχ ἡ καθόλου· ἢ ἄμφω, ἀλλ' ἡ μὲν ἠρεμοῦσα μᾶλ- 20 λον, ἡ δ' οὔ.

12 Τὴν μὲν οὖν θρεπτικὴν ψυχὴν ἀνάγκη πᾶν ἔχειν ὅτι περ ἂν ζῇ, καὶ ψυχὴν ἔχει ἀπὸ γενέσεως καὶ μέχρι φθορᾶς· ἀνάγκη γὰρ τὸ γενόμενον αὔξησιν ἔχειν καὶ ἀκμὴν καὶ φθίσιν, ταῦτα δ' ἄνευ τροφῆς ἀδύνατον· ἀνάγκη ἄρα ἐνεῖναι 25 τὴν θρεπτικὴν δύναμιν ἐν πᾶσι τοῖς φυομένοις καὶ φθίνουσιν.
2 αἴσθησιν δ' οὐκ ἀναγκαῖον ἐν ἅπασι τοῖς ζῶσιν· οὔτε γὰρ ὅσων τὸ σῶμα ἁπλοῦν, ἐνδέχεται ἁφὴν ἔχειν, [οὔτε ἄνευ ταύτης οἷόν τε οὐθὲν εἶναι ζῷον] οὔτε ὅσα μὴ δεκτικὰ τῶν
3 εἰδῶν ἄνευ τῆς ὕλης. τὸ δὲ ζῷον ἀναγκαῖον αἴσθησιν ἔχειν, 30 εἰ μηθὲν μάτην ποιεῖ ἡ φύσις. ἕνεκά του γὰρ πάντα ὑπάρχει τὰ φύσει, ἢ συμπτώματα ἔσται τῶν ἕνεκά του. εἰ οὖν πᾶν σῶμα πορευτικόν, μὴ ἔχον αἴσθησιν, φθείροιτο ἂν καὶ εἰς τέλος οὐκ ἂν ἔλθοι, ὅ ἐστι φύσεως ἔργον· πῶς γὰρ θρέ- 434b ψεται; τοῖς μὲν γὰρ μονίμοις ὑπάρχει τὸ ὅθεν πεφύκασιν.
4 οὐχ οἷόν τε δὲ σῶμα ἔχειν μὲν ψυχὴν καὶ νοῦν κριτικόν, αἴσθησιν δὲ μὴ ἔχειν, μὴ μόνιμον ὄν, γενητὸν δέ. [ἀλλὰ μὴν οὐδὲ ἀγένητον·] διὰ τί γὰρ ἕξει; ἢ γὰρ τῇ ψυχῇ βέλτιον 5 ἢ τῷ σώματι. νῦν δ' οὐδέτερον· ἡ μὲν γὰρ οὐ μᾶλλον νοήσει, τὸ δ' οὐθὲν ἔσται μᾶλλον δι' ἐκεῖνο. οὐθὲν ἄρα ἔχει ψυχὴν σῶμα μὴ μόνιμον ἄνευ αἰσθήσεως.

16. *κινεῖ* T W X, vel *κινεῖ* vel *κινεῖται* hic legi commemorat Simpl. 311, 9 sq. || 17. *ἕκαστον* E y Them. || 19. *τοίνυν*] *τὸ νῦν* E, sed ita ut lacuna sit minuta inter *το* et *νυν* (Trend. Bus.) Bek. Trend., *νῦν* X y, om. L S T U V W, *τοίνυν* Simpl. Torst. || 19. *ἢ δὴ αὕτη*...20. *καθόλου, ἢ ἄμφω* coni. Spengel in com. ad Ar. rhet. II, 300 || 20. *καθόλου; ἢ* scripsit Torst. || 23. *καὶ ἔχειν* coni. Christ, *ἔχῃ* X y Bek. Trend., *ἔχει* etiam Philop. Torst., *ἔχειν* videtur legisse Them. 122, 22 || *καὶ* om. T U V X y Bek. Trend. || 27. alios *ζῶσιν*, alios *ζῴοις* legere tradit Philop. 598, 17 sq. || 28. *ὅσων*] *ὧν* E L Philop., *ὅσων* etiam Simpl. 320, 38 et, ut videtur, Them. 122, 29 sq. || *οὔτε*...29. *ζῷον* suspecta erant Trend., unc. incl. Torst., leg. Simpl., non videtur legisse Them. Philop. Soph. || 29. *οὐθὲν οἷόν τε* L T W, *οἷόν τε οὐθὲν* etiam Simpl. || 30. *τὸ δὲ ζῷον*] *τί δὲ ζῶν* coni. Essen III, p. 64 || 31. *μη-*] exit E || *ἅπαντα* L T V X || 33. pro *πᾶν* coni. Torst. *εἴη* vel *γένοιτο*, cui assentitur Dittenberger, p. 1615, pro *ἔχον* coni. Trend. *ἔχοι*, quod probant Steinhart et Susemihl, Oecon. p. 86, post *πορευτικόν* virgulam posuit Biehl || 434 b, 2. *τὸ*] *ταῦτα* W, *τοῦτο* S T U V X y Trend. || *ὅθι* U, *ὅτι* S V X, *ὅθεν* etiam Philop. Simpl. || 4. *γενητὸν* et 5. *ἀγένητον* Simpl. Them. Philop. ex cod. D Hayduck Torst., reliqui

The cognitive faculty, however, is not subject to motion, but is 4 at rest. The major premiss is universal, whether judgment or proposition, while the minor has to do with a particular fact: for, while the former asserts that such and such a person ought to do such and such an act, the latter asserts that a particular act is one of the sort and that I am such a person. Now it is the latter judgment which at once moves to action, not the universal. Or shall we say that it is both together, but the one is akin to the unmoved movent, the other is not?

The practical syllogism.

Every living thing, then, must have the nutritive soul and in fact **12** has a soul from its birth till its death. For what has been born must necessarily grow, reach maturity and decline, and for these processes nutriment is indispensable. It follows, then, of necessity that the nutritive faculty is present in all things that grow and decay. But sensation is not 2 necessarily present in all living things. For wherever the body is uncompounded there can be no sense of touch [*yet without this sense animal existence is impossible*]: nor, again, in those living things which are incapable of receiving forms apart from matter. But 3 the animal must of necessity possess sensation, if nature makes nothing in vain: for everything in nature subserves an end or else will be an accessory of things which subserve an end. Now every living body having the power of progression and yet lacking sensation would be destroyed and never reach full development, which is its natural function. For how in such a case is it to obtain nutriment? Motionless animals, it is true, have for nutriment that from which they have been developed. But a body, not stationary, but produced by genera- 4 tion, cannot possibly have a soul and an intelligence capable of judging without also having sensation. [*Neither can it, if it be not generated.*] For why should it have the one without the other? Presumably for the advantage either of the soul or of the body. But neither of these alternatives is, in fact, admissible. For the soul will be no better able to think, and the body will be no better off, for the absence of sensation. We conclude, then, that no body that is not stationary has soul without having sensation.

Teleology: nutritive soul necessary.

Sensation necessary to animals.

ante Torst. omnes *γεννητὸν* et *ἀγέννητον*, etiam Them. v.l. Philop. ed. Trincavelli || *ἀλλὰ*... 5. *ἀγένητον* unc. inclusit Torst., leg. quidem omnes libri scripti et impressi, etiam Them. Philop. 599, 32 Soph. et apud Simpl. et Philop. Alex. et Plut. et vet. transl., omisit Simpl., qui annotat 320, 28: *ἔν τισι δὲ ἀντιγράφοις πρόσκειται τὸ ἀλλὰ μὴν οὐδὲ ἀγένητον* || 4. *οὐ μὴν ἀλλὰ ἀγ.* coni. Essen III, p. 65 || 5. *γὰρ οὐχ ἕξει* T U V W y Plut. apud Simpl. et apud Philop. et vet. transl., om. *οὐχ* reliqui, etiam Them. Philop. Alex. || verbis *διὰ τί γὰρ ἕξει* (sc. *τὸ μόνιμον*); *ἢ γὰρ*...7. *δι' ἐκεῖνο* parenthesi inclusis apodosin sententiae conditionalis *εἰ οὖν πᾶν* ab *οὐθὲν ἄρα ἔχει* incipere statuit Christ || 7. *τῷ* L W, *τὸ* etiam Them.

5 ἀλλὰ μὴν εἴγε αἴσθησιν ἔχει, ἀνάγκη τὸ σῶμα εἶναι ἢ ἁπλοῦν
ἢ μεικτόν. οὐχ οἷόν τε δὲ ἁπλοῦν· ἁφὴν γὰρ οὐχ ἕξει, ἔστι δὲ 10
6 ἀνάγκη ταύτην ἔχειν. τοῦτο δὲ ἐκ τῶνδε δῆλον. ἐπεὶ γὰρ τὸ
ζῷον σῶμα ἔμψυχόν ἐστι, σῶμα δὲ ἅπαν ἁπτόν, ἁπτὸν δὲ τὸ
αἰσθητὸν ἁφῇ, ἀνάγκη καὶ τὸ τοῦ ζῴου σῶμα ἁπτικὸν
εἶναι, εἰ μέλλει σῴζεσθαι τὸ ζῷον. αἱ γὰρ ἄλλαι αἰσθή-
σεις δι' ἑτέρων αἰσθάνονται, οἷον ὄσφρησις ὄψις ἀκοή· 15
ἁπτόμενον δέ, εἰ μὴ ἕξει αἴσθησιν, οὐ δυνήσεται τὰ μὲν
φεύγειν τὰ δὲ λαβεῖν. εἰ δὲ τοῦτο, ἀδύνατον ἔσται σῴζε-
7 σθαι τὸ ζῷον. διὸ καὶ ἡ γεῦσίς ἐστιν ὥσπερ ἁφή τις· τρο-
φῆς γάρ ἐστιν, ἡ δὲ τροφὴ τὸ σῶμα τὸ ἁπτόν. ψόφος δὲ
καὶ χρῶμα καὶ ὀσμὴ οὐ τρέφει, οὐδὲ ποιεῖ οὔτ' αὔξησιν οὔτε 20
φθίσιν. ὥστε καὶ τὴν γεῦσιν ἀνάγκη ἁφὴν εἶναί τινα, διὰ
τὸ τοῦ ἁπτοῦ καὶ θρεπτικοῦ αἴσθησιν εἶναι· αὗται μὲν οὖν
ἀναγκαῖαι τῷ ζῴῳ, καὶ φανερὸν ὅτι οὐχ οἷόν τε ἄνευ
8 ἁφῆς εἶναι ζῷον. αἱ δὲ ἄλλαι τοῦ τε εὖ ἕνεκα καὶ γένει
ζῴων ἤδη οὐ τῷ τυχόντι, ἀλλὰ τισίν, οἷον τῷ πορευτικῷ 25
ἀνάγκη ὑπάρχειν· εἰ γὰρ μέλλει σῴζεσθαι, οὐ μόνον δεῖ
ἁπτόμενον αἰσθάνεσθαι ἀλλὰ καὶ ἄποθεν. τοῦτο δ' ἂν εἴη,
εἰ διὰ τοῦ μεταξὺ αἰσθητικὸν εἴη τῷ ἐκεῖνο μὲν ὑπὸ τοῦ
9 αἰσθητοῦ πάσχειν καὶ κινεῖσθαι, αὐτὸ δ' ὑπ' ἐκείνου. ὥσπερ
γὰρ τὸ κινοῦν κατὰ τόπον μέχρι του μεταβάλλειν ποιεῖ, 30
καὶ τὸ ὦσαν ἕτερον ποιεῖ ὥστε ὠθεῖν, καὶ ἔστι διὰ μέσου ἡ
κίνησις, καὶ τὸ μὲν πρῶτον κινεῖ καὶ ὠθεῖ οὐκ ὠθούμενον,
τὸ δ' ἔσχατον μόνον ὠθεῖται οὐκ ὦσαν, τὸ δὲ μέσον ἄμφω,
πολλὰ δὲ μέσα, οὕτω <καὶ> ἐπ' ἀλλοιώσεως, πλὴν ὅτι μένοντος 435 a
ἐν τῷ αὐτῷ τόπῳ ἀλλοιοῖ, οἷον εἰ εἰς κηρὸν βάψειέ τις,
μέχρι τούτου ἐκινήθη, ἕως ἔβαψεν· λίθος δὲ οὐδέν, ἀλλ'

9. ἔχοι L, om. SUV || 9. ἀνάγκη...13. ἁφῇ unc. incl. Essen || 17. ἐστι TX, ἔσται etiam Philop. || 18. διὸ καὶ...19. ἁπτόν post., 21. ὥστε...22. εἶναι pr., edit. esse iudicat Torst. || 19. post ἁπτόν addendum καὶ θρεπτικόν censet Bywater, p. 67 || 24. τὸ ζῷον L, τὸ om. Them. || 27. σῴζεσθαι TWX, αἰσθάνεσθαι etiam Soph. || 30. του Torst. et, ut videtur, Them. 124, 30, Soph. interpretatur μέχρι τινός, τούτου S, reliqui ante Torst. omnes τοῦ || 31. ὦσαν] ὠσθὲν coni. Torst., ὦσαν etiam Simpl. Soph. et, ut videtur, Philop. 605, 1 || καὶ ἔστι...32. κίνησις] καὶ ἔστι ταῦτα διὰ μέσου coni. Torst., vulg. tuetur Soph. || 32. καὶ τὸ μὲν πρ. W Torst., τὸ δὲ πρ. L, καὶ τὸ πρ. μὲν TX, καὶ μὲν δὴ τὸ πρ. SU, καὶ δὴ τὸ μὲν πρ. Vy Bek. Trend. || κινεῖ καὶ ὠθεῖ Ly Soph., reliqui ante Biehlium omnes κινοῦν ὠθεῖ, κινοῦν unc. incl. Torst. || 33. ὦσαν] ὠθοῦν X || 435 a, 1. οὕτω δὴ ἐπ' vel οὕτω δὴ καὶ ἐπ' coni. Torst., οὕτω vel οὕτως καὶ ἐπὶ Them. Simpl. Philop. Soph. vet. transl., om. καὶ omnes codd., <καὶ> in textum recepit Biehl || μένοντα VWX Trend., μένοντος etiam

But, further, the body, assuming that it has sensation, must be either simple or composite. But it cannot be simple, for then it would not have touch, and this sense is indispensable. This is clear from the following considerations. The animal is an animate body. Now body is always tangible and it is that which is perceptible by touch which is tangible: from which it follows that the body of the animal must have tactile sensation, if the animal is to survive. For the other senses, that is to say, smell, sight, hearing, have media of sensation, but a being which has no sensation will be unable when it comes into contact with things to avoid some and seize others. And if this is so, it will be impossible for the animal to survive. This is why taste is a kind of touch, for taste is of nutriment and nutriment is body which is tangible; whereas sound, colour and smell afford no nourishment and promote neither growth nor decay. So that taste also must be a kind of touch, because it is a sensation of that which is tangible and nutritive. These two senses, then, are necessary to the animal, and it is plain that without touch no animal can exist. 5 6 7

Touch necessary for self-preservation.

But the other senses are means to well-being, and are necessary, not to any and every species of animal, but only to certain species, as, for example, those capable of locomotion. For, if the animal capable of locomotion is to survive, it must have sensation, not only when in contact with anything, but also at a distance from it. And this will be secured if it can perceive through a medium, the medium being capable of being acted upon and set in motion by the sensible object, and the animal itself by the medium. Now that which causes motion from place to place produces a change operating within certain limits, and that which propels causes the thing propelled to propel in turn, the movement being transmitted through something intermediate. The first in the series initiates motion and propels without being itself propelled, while the last is simply propelled without propelling; the numerous middle terms of the series both propel and are propelled. So it is also with qualitative change, except that what is subject to this change remains in the same place. Suppose we were to dip something into wax, the movement in the wax would extend just so far down as we had dipped the object, whereas in the like case 8 9

The higher senses necessary to progressive animals.

A medium necessary for sensation.

Philop. et, ut videtur, Them. 124, 28 || 2. ἀλλοιοῖ, οἷον] ἀλλ' οἷον S Poppelreuter, zur Psych. d. Ar., p. 17 || 3. τοῦ U X.

ὕδωρ μέχρι πόρρω· ὁ δ' ἀὴρ ἐπὶ πλεῖστον κινεῖται καὶ
ποιεῖ καὶ πάσχει, ἐὰν μένῃ καὶ εἷς ᾖ. διὸ καὶ περὶ ἀνα- 5
κλάσεως βέλτιον ἢ τὴν ὄψιν ἐξιοῦσαν ἀνακλᾶσθαι, τὸν ἀέρα
πάσχειν ὑπὸ τοῦ σχήματος καὶ χρώματος, μέχρι περ οὗ
ἂν ᾖ εἷς. ἐπὶ δὲ τοῦ λείου ἐστὶν εἷς· διὸ πάλιν οὗτος τὴν ὄψιν
κινεῖ, ὥσπερ ἂν εἰ τὸ ἐν τῷ κηρῷ σημεῖον διεδίδοτο μέχρι
τοῦ πέρατος. 10

13 Ὅτι δ' οὐχ οἷόν τε ἁπλοῦν εἶναι τὸ τοῦ ζῴου σῶμα,
φανερόν, λέγω δ' οἷον πύρινον ἢ ἀέρινον. ἄνευ μὲν γὰρ
ἁφῆς οὐδεμίαν ἐνδέχεται ἄλλην αἴσθησιν ἔχειν· τὸ γὰρ
σῶμα ἁπτικὸν τὸ ἔμψυχον πᾶν, ὥσπερ εἴρηται. τὰ δὲ
ἄλλα ἔξω γῆς αἰσθητήρια μὲν ἂν γένοιτο, πάντα δὲ τῷ 15
δι' ἑτέρου αἰσθάνεσθαι ποιεῖ τὴν αἴσθησιν καὶ διὰ τῶν με-
ταξύ. ἡ δ' ἁφὴ τῷ αὐτῶν ἅπτεσθαί ἐστιν, διὸ καὶ τοὔνομα
τοῦτο ἔχει. καίτοι καὶ τὰ ἄλλα αἰσθητήρια ἁφῇ αἰσθάνε-
ται, ἀλλὰ δι' ἑτέρου· αὕτη δὲ δοκεῖ μόνη δι' αὑτῆς. ὥστε τῶν
μὲν τοιούτων στοιχείων οὐθὲν ἂν εἴη σῶμα τοῦ ζῴου. οὐδὲ δὴ 20
γήϊνον. πάντων γὰρ ἡ ἁφὴ τῶν ἁπτῶν ἐστιν ὥσπερ μεσότης,
καὶ δεκτικὸν τὸ αἰσθητήριον οὐ μόνον ὅσαι διαφοραὶ γῆς
εἰσίν, ἀλλὰ καὶ θερμοῦ καὶ ψυχροῦ καὶ τῶν ἄλλων ἁπτῶν ἁπάν-
των. καὶ διὰ τοῦτο τοῖς ὀστοῖς καὶ ταῖς θριξὶ καὶ τοῖς τοι-
ούτοις μορίοις οὐκ αἰσθανόμεθα, ὅτι γῆς ἐστίν. καὶ τὰ φυτὰ 25
διὰ τοῦτο οὐδεμίαν ἔχει αἴσθησιν, ὅτι γῆς ἐστίν· ἄνευ δὲ ἁ- 435b
φῆς οὐδεμίαν οἷόν τε ἄλλην ὑπάρχειν, τοῦτο δὲ τὸ αἰσθητήρι-
ον οὐκ ἔστιν οὔτε γῆς οὔτε ἄλλου τῶν στοιχείων οὐδενός.

2 φανερὸν τοίνυν ὅτι ἀνάγκη μόνης ταύτης στερισκόμενα
τῆς αἰσθήσεως τὰ ζῷα ἀποθνήσκειν· οὔτε γὰρ ταύτην 5
ἔχειν οἷόν τε μὴ ζῷον, οὔτε ζῷον ὂν ἄλλην ἔχειν
ἀνάγκη πλὴν ταύτης. καὶ διὰ τοῦτο τὰ μὲν ἄλλα αἰσθητὰ
ταῖς ὑπερβολαῖς οὐ διαφθείρει τὸ ζῷον, οἷον χρῶμα
καὶ ψόφος καὶ ὀσμή, ἀλλὰ μόνον τὰ αἰσθητήρια, ἂν μὴ

4. post πόρρω punctum Bek. Trend. Torst., colon Biehl, virgulam Susemihl B. J. IX, 352 ‖ 5. μείνῃ S U X y Them. Philop., μένῃ etiam Soph. ‖ περὶ ἀνακλάσεως unc. incl. Torst. Essen III, p. 66, leg. Them. Philop. Soph. ‖ 6. ἀνακλᾶσθαι L W Them. Soph. Trend. Torst., reliqui ante Trend. omnes κλᾶσθαι ‖ 7. ἂν οὗ ᾖ εἷς L, οὗ ἂν ᾖ εἷς T W X Soph. Biehl, reliqui ante Biehlium omnes οὗ ἂν εἷς ᾖ ‖ 8. τοῦ λείου] τελείου X y ‖ πάλιν om. L, leg. Them. Philop., πάλιν καὶ W ‖ 9. ἐκίνει X ‖ 13. ἄλλην ἐνδέχεται S U V ‖ 17. ἁπτῶν W, τῶν ἁπτῶν y, αὐτῶν etiam Them. Simpl. Soph. 148, 21 ‖ 18. καίτοι… 19. αὑτῆς unc. incl. Essen III, p. 67 ‖ 19. ἑτέρων L V ‖ 435 b, 1. αἴσθησιν ἔχει L W ‖ εἰσίν T V X ‖ 2. ἄλλην οἷόν τε V W y, οἷόν τε ἄλλην etiam Soph. ‖ 6. οἷόν τε μὴ ζῷον ὂν

a stone is not moved at all, while water is disturbed to a great distance and air is disturbed to the farthest extent possible and acts and is acted upon as long as it remains unbroken. And, to revert to the reflection of light, that is why, instead of holding that the visual ray leaving the eye is reflected, it would be better to say that the air is acted upon by the shape and colour, so long as it is one and unbroken. This is the case over any smooth surface: and accordingly the air acts on the organ of sight in turn, just as if the impress on the wax had penetrated right through to the other side.

13 It is evident that the body of an animal cannot be uncompounded; I mean, it cannot consist entirely of fire, for instance, or of air. An animal, unless it has touch, can have no other sense, the animate body being always, as we have remarked, capable of tactile sensation. Now the other elements, with the exception of earth, would make sense-organs: but it is always indirectly and through media that such organs effect sensation. Touch, however, acts by direct contact with objects: hence its name. The other sense-organs, it is true, also perceive by contact, but it is by indirect contact: touch alone, it would seem, perceives directly in and through itself. Thus, then, no one of the three elements referred to can constitute the body of the animal. Nor indeed can it be of earth. For touch is a sort of mean between all tangible qualities, and its organ is receptive not only of all the distinctive qualities of earth, but also of heat and cold and all other tangible qualities. And this is why we do not perceive anything with our bones and our hair and such parts of us, namely, because they are of earth. And for the same reason plants, too, have no sensation, because they are composed of earth. Without touch, however, there can be no other sense; and the organ of this sense does not consist of earth nor of any other single element.

A mixture of several elements necessary to the animal body.

2 Thus it is evident that this is the only sense the loss of which necessarily involves the death of the animal. For it is not possible for anything that is not an animal to have this sense, nor is it necessary for anything that is an animal to have any other sense besides this. And this explains another fact. The other sensibles—I mean, colour, sound, odour—do not by their excess destroy the animal, but only the corresponding sense-organs: except incidentally, as when concurrently

Why tangibles in excess destroy life.

ἔχειν W, *οἷόν τε ἔχειν μὴ ζῷον ὂν* y, *οἷόν τε μὴ ζῷον ἔχειν αὐτὴν* Soph., *μὴ ἔχον οἷόν τε εἶναι ζῷον* coni. Steinhart, *οἷόν τε μὴ ἔχειν ζῷον* coni. Hayduck, progr. Gryph. 7 ‖ *ὂν* ante *ἄλλην* om. S U V y Soph., *ζῷον ὂν* delendum esse censet Hayduck l. l. ‖ 7. *ταύτην* U X y et T (supra posito *s*).

κατὰ συμβεβηκός, οἷον ἂν ἅμα τῷ ψόφῳ ὦσις γένηται 10
καὶ πληγή, καὶ ὑπὸ ὁραμάτων καὶ ὀσμῆς ἕτερα κινεῖται,
ἃ τῇ ἁφῇ φθείρει. καὶ ὁ χυμὸς δὲ ᾗ ἅμα συμβαίνει
3 ἁπτικὸν εἶναι, ταύτῃ φθείρει. ἡ δὲ τῶν ἁπτῶν ὑπερβολή,
οἷον θερμῶν καὶ ψυχρῶν καὶ σκληρῶν, ἀναιρεῖ τὸ ζῷον·
παντὸς μὲν γὰρ ὑπερβολὴ αἰσθητοῦ ἀναιρεῖ τὸ αἰσθητήριον, 15
ὥστε καὶ τὸ ἁπτὸν τὴν ἁφήν, ταύτῃ δὲ ὥρισται τὸ ζῆν·
ἄνευ γὰρ ἁφῆς δέδεικται ὅτι ἀδύνατον εἶναι ζῷον. διὸ ἡ
τῶν ἁπτῶν ὑπερβολὴ οὐ μόνον τὸ αἰσθητήριον φθείρει, ἀλλὰ
καὶ τὸ ζῷον, ὅτι ἀνάγκη μόνην ἔχειν ταύτην. τὰς δ' ἄλ-
λας αἰσθήσεις ἔχει τὸ ζῷον, ὥσπερ εἴρηται, οὐ τοῦ εἶναι 20
ἕνεκα ἀλλὰ τοῦ εὖ, οἷον ὄψιν, ἐπεὶ ἐν ἀέρι καὶ ὕδατι,
ὅπως ὁρᾷ, ὅλως δ' ἐπεὶ ἐν διαφανεῖ, γεῦσιν δὲ διὰ τὸ
ἡδὺ καὶ λυπηρόν, ἵνα αἰσθάνηται τὸ ἐν τροφῇ καὶ ἐπιθυμῇ
καὶ κινῆται, ἀκοὴν δὲ ὅπως σημαίνηταί τι αὐτῷ, γλῶτταν
δὲ ὅπως σημαίνῃ τι ἑτέρῳ. 25

15. ὑπερβολὴ αἰσθητοῦ L W Them. Soph., recepit Biehl, αἰσθητικοῦ ὑπερβολὴ T U V, reliqui ante Biehlium omnes αἰσθητοῦ ὑπερβολὴ || 16. διώρισται S T U X, ὥρισται etiam Soph. || ζῷον T X, quam lectionem probat H. Jackson, ζῆν etiam Soph. || 22. ὅπως ὁρᾷ post διαφανεῖ transponendum esse dubitanter coni. Susemihl, Oecon. p. 86 || δὲ διὰ] τε διὰ T V y Bek. Trend., δὲ etiam Soph. Torst. || 24. σημανῇ T U X, σημαίνῃ S V W y Soph. Bek. Trend., σημαίνηται (om. τι) L Torst., σημαίνηταί τι etiam sine dubio Them. et vet. transl. || αὑτῷ restituit Torst., vulgo αὐτῷ || 24. γλῶτταν...25. ἑτέρῳ unc. incl. Torst. Essen III, p. 68, leg. Them. Philop. Soph. et vet. transl.

17.
19. αυ.
εἰσὶν T V λ

with the sound some thrust or blow is given, or when objects of sight or smell move something else which destroys by contact. Flavour, again, destroys only in so far as it is at the same time tactile. Tangible qualities, on the other hand, as heat, cold and 3 hardness, if in excess, are fatal to the living animal. For excess of any sensible object is fatal to the organ, and so consequently excess of the tangible object is fatal to touch. And it is by this sense that the life of the animal is defined, touch having been proved to be indispensable to the existence of an animal. Hence excess in tangible qualities destroys not only the sense-organ, but also the animal itself. For touch is the one sense that the animal cannot do without. The other senses which it possesses are, as we have said, the means, not to its being, but to its well-being. Thus the animal has sight to see with, because it lives in air or water or, speaking generally, in a transparent medium. It has taste on account of what is pleasant and painful, to the end that it may perceive what is pleasant in food and feel desire and be impelled to movement. It has hearing in order that information may be conveyed to it, and a tongue, that in its turn it may convey information to its fellow.

The higher senses necessary to well-being.

CODICIS E FRAGMENTA RECENSIONIS A VULGATA DIVERSAE.

I.

lib. II, 412a, 3—12. E. fol. 186 v°.

Ἐπεὶ δὲ τὰ παραδεδομένα περὶ ψυχῆς παρὰ τῶν ἄλλων,
ἐφ' ὅσον ἕκαστος ἀπεφήνατο τῶν πρότερον, εἴρηται σχεδόν,
νῦν ὥσπερ ἐξ ἀρχῆς πάλιν ἐπανίωμεν πειρώμενοι διορίσαι
τί ἐστιν ἡ ψυχὴ καὶ τίς ἂν εἴη λόγος αὐτῆς κοινότατος·
χωρίζομεν δὴ τὰς μὲν οὐσίας ἀπὸ τῶν ὄντων τῶν ἄλλων· 5
τῆς δὲ οὐσίας τὸ μὲν ὡς ὕλην λέγεσθαι τίθεμεν, ὃ καθ' αὑτὸ
<μὲν οὐκ ἔστι τόδε τι, τὸ> δὲ ἡ μορφή, τὸ δ' ἐκ τούτων.
ἔστι δ' ἡ μὲν ὕλη δυνάμει, τὸ δ' εἶδος ἐντελέχεια, αὕτη δ'
ὑπάρχει διχῶς, ἢ γὰρ ὡς ἡ ἐπιστήμη, ἢ ὡς τὸ θεωρεῖν,
οὐσίαι δὲ μάλιστα δοκοῦσιν εἶναι τὰ σώματα καὶ τούτων τὰ 10
φυσικά· ἀρχαὶ γὰρ....

II.

lib. II, 414b, 13—416a, 9. E. fol. I, r°.

Ὁ δὲ χυμὸς ὥσπερ ἥδυσμα τούτοις ἐστίν· διόπερ ὅσα
ἔχει τῶν ζῴων ἁφήν, πᾶσιν ὑπάρχει καὶ ὄρεξις. περὶ δὲ
φαντασίας ἄδηλον καὶ ὕστερον ἐπισκεπτέον. ἐνίοις δὲ ταῦτά
τε ὑπάρχει καὶ τὸ κατὰ τόπον κινητικόν, τοῖς δ' ἔτι πρὸς
τούτοις διάνοια καὶ νοῦς, οἷον ἀνθρώπῳ καὶ εἴ τι ἄλλο 5
ζῷον ἕτερόν ἐστι τοιοῦτον ἢ καὶ τιμιώτερον. δῆλον οὖν
ὡς ὁμοίως σχήματος καὶ ψυχῆς εἷς ἂν εἴη λόγος. οὔτε
γὰρ ἐκεῖ σχῆμα παρὰ τρίγωνόν ἐστι καὶ τὰ ἐφεξῆς, οὔτ'
ἐνταῦθα ψυχὴ παρὰ τὰς εἰρημένας. γένοιτο δ' ἂν καὶ ἐπὶ
τῶν σχημάτων λόγος, ὃς ἐφαρμόσει <μὲν> πᾶσιν, οὐκ ἔσται 10

I. 7. μὲν οὐκ ἔστι τόδε τι, τὸ supplevit Torst. || II. 5. τούτοις καὶ E (Bus.) | 8. παρὰ τὸ τρ. coni. Torst. || 10. μὲν om. E.

μέντοι ἴδιος οὐθενὸς σχήματος. ὁμοίως δὲ καὶ ἐπὶ ταῖς εἰρημέναις ψυχαῖς. διὸ γελοῖον ζητεῖν τὸν κοινὸν λόγον καὶ ἐπ' ἄλλων καὶ ἐπὶ τούτων, ὃς οὐκ ἔσται οὐθενὸς τῶν ὄντων ἴδιος, οὐδὲ κατὰ τὸ οἰκεῖον καὶ ἄτομον εἶδος, τὸν τοιοῦτον ἀφέντας. παραπλησίως δὲ ὥσπερ καὶ ἐπὶ τῶν σχημάτων, ἔχει καὶ τὰ 15 περὶ τὴν ψυχήν· ἀεὶ γὰρ ἐν τῷ ἐφεξῆς ὑπάρχει δυνάμει τὸ πρότερον ἐπί τε τῶν σχημάτων καὶ ἐπὶ τῶν ἐμψύχων, λέγω δ' ὥσπερ ἐν τετραγώνῳ μὲν τρίγωνον, ἐν αἰσθητικῷ δὲ τὸ θρεπτικόν. ὥστε καὶ καθ' ἕκαστον δεῖ ζητεῖν τίς ἡ ἑκάστου ψυχή, οἷον τίς φυτοῦ καὶ τίς ἀνθρώπου καὶ τίς θηρίου. διὰ τίνα δ' αἰτίαν τῷ 20 ἐφεξῆς οὕτως ἔχουσι, σκεπτέον. ἄνευ μὲν γὰρ τοῦ θρεπτικοῦ οὐθέν ἐστιν αἰσθητικόν· τοῦ δ' αἰσθητικοῦ χωρίζεται τὸ θρεπτικόν, οἷον ἐν τοῖς φυτοῖς. πάλιν δ' ἄνευ τοῦ ἁπτικοῦ οὐδεμία τῶν ἄλλων αἰσθήσεων, ἁφὴ δ' ἄνευ τῶν ἄλλων ὑπάρχει· πολλὰ γάρ ἐστι τῶν ζῴων, ἃ οὔτ' ὄψιν ἔχει οὔτ' ἀκοήν. καὶ 25 τῶν αἰσθητικῶν δὲ κίνησις τοῖς μὲν ὑπάρχει τοῖς δ' οὐχ ὑπάρχει· τελευταῖον δὲ διάνοια καὶ λογισμός· οἷς μὲν γὰρ ὑπάρχει λογισμός, καὶ τῶν ἄλλων ἕκαστον τῶν εἰρημένων, οἷς δ' ἐκείνων ἕκαστον, οὐ πᾶσιν ὑπάρχει λογισμός. ἀλλὰ τὰ μὲν οὐδὲ φαντασίαν ἔχει μόνον. ὅτι μὲν οὖν ὁ περὶ τούτων 30 ἑκάστου λόγος οἰκειότατος περὶ ψυχῆς ἐστί, δῆλον.

IV. Ἀνάγκη δὲ τὸν περὶ τούτων μέλλοντα πραγματεύεσθαι λαβεῖν τί ἕκαστον αὐτῶν ἐστίν, εἶθ' οὕτω περὶ τῶν ἐχομένων καὶ τῶν ἄλλων ποιεῖσθαι τὴν ἐπίσκεψιν. εἰ δὲ δεῖ λέγειν τί ἕκαστον, οἷον τί τὸ νοητικὸν ἢ τί τὸ αἰσθητικὸν ἢ 35 θρεπτικόν, πρότερον λεκτέον τί τὸ νοεῖν καὶ τί τὸ αἰσθάνεσθαι· αἱ γὰρ πράξεις καὶ αἱ ἐνέργειαι πρότεραι κατὰ τὸν λόγον εἰσὶ τῶν δυνάμεων. ἀλλὰ μὴν εἴ γε ταῦτα πρότερον ἔτι τούτων διοριστέον τὰ ἀντικείμενα, οἷον περὶ τροφῆς καὶ αἰσθητοῦ καὶ νοητοῦ διὰ τὴν αὐτὴν αἰτίαν. ὥστε πρῶτον 40 περὶ τροφῆς καὶ γεννήσεως λεκτέον· αὕτη γὰρ ἡ ψυχὴ καὶ τοῖς ἄλλοις ὑπάρχει, πρώτη δὲ καὶ κοινοτάτη ψυχῆς ἐστὶ δύναμις, καθ' ἣν ὑπάρχει τὸ ζῆν πᾶσιν. ἧς ἔργον ἐστὶ γέννησις καὶ τὸ χρῆσθαι τροφῇ· τοῦτο γὰρ ἔργον μάλιστα φυσικὸν πᾶσι τοῖς ζῶσιν, ὅσα μὴ ἀτελῆ ἢ πηρώματά ἐστιν, ἢ αὐτό- 45 ματον ἔχει τὴν γένεσιν, τὸ ποιῆσαι οἷον αὐτὸ ἕτερον, ζῷον

20. 21. τὸ ἐφ. E || 42. πρώτη καὶ κοινοτάτη ψυχῆς δ' ἐστὶ E.

μὲν ζῷα, φυτὸν δὲ φυτά, ἵνα τοῦ ἀεὶ καὶ τοῦ θείου μετέχῃ ἕκαστον ὃν δύναται τρόπον· πάντα γὰρ ἐκείνου ὀρέγεται, κἀκείνου ἕνεκα πράττει ὅσα πράττει κατὰ φύσιν. τὸ γὰρ οὗ ἕνεκα διττόν, τὸ μὲν οὗ, τὸ δὲ ᾧ· ἐπεὶ οὖν οὐ τῇ συνεχείᾳ τοῦ ἀεὶ καὶ τοῦ 50 *θείου δύναται κοινωνεῖν· οὐ γὰρ ἐνδέχεται τὸ αὐτὸ ἀεὶ ἀριθμῷ εἶναι οὐθὲν τῶν φθαρτῶν· ὃν τρόπον ἐπιβάλλει, τοῦτον ἕκαστον θιγγάνει, τὸ μὲν μᾶλλον, τὸ δὲ ἧττον· καὶ διαμένει οὐκ αὐτό, ἀλλ' οἷον αὐτό, ἀριθμῷ μὲν οὐχ ἕν, εἴδει δ' ἕν. ἔστι δ' ἡ ψυχὴ ἀρχὴ τοῦ ζῶντος σώματος, ἀλλ' ἡ ἀρχὴ καὶ τὸ αἴτιον* 55 *λέγεται πολλαχῶς. ὁμοίως δ' ἡ ψυχὴ τοὺς τρεῖς τρόπους αἰτία τοὺς διωρισμένους· καὶ γὰρ ὅθεν ἡ κίνησις καὶ οὗ ἕνεκα καὶ ὡς οὐσία τῶν ἐμψύχων σωμάτων ἐστὶν ἡ ψυχή. ὅτι μὲν οὖν ὡς οὐσία δῆλον· τοῦ γὰρ εἶναι ἡ οὐσία αἴτιον πᾶσι, τὸ δὲ ζῆν τοῖς ζῶσι τὸ εἶναί ἐστιν, αἴτιον δὲ καὶ ἀρχὴ ἡ* 60 *ψυχὴ τούτου ἐστίν. φανερὸν δὲ καὶ ὡς τὸ οὗ ἕνεκα ἡ ψυχή· καὶ γὰρ ἡ φύσις ἕνεκά του ποιεῖ ὥσπερ ὁ νοῦς, καὶ τοῦτ' ἔστιν αὐτῆς τὸ τέλος. καὶ ἡ ψυχὴ τοιοῦτον ἐν τοῖς κατὰ φύσιν, καὶ πᾶν τὸ σῶμα ὄργανον τῇ ψυχῇ· ὥσπερ δὲ τὸ τῶν ζῴων, καὶ τὸ τῶν φυτῶν. ἀλλὰ μὴν καὶ ὅθεν ἡ κίνησις* 65 *πρῶτον ἡ κατὰ τόπον, τοῦτό ἐστι ψυχή· ἀλλ' οὐ πᾶσι τοῖς ζῴοις ἡ τοιαύτη ὑπάρχει δύναμις. ἔτι δ' ἀλλοίωσις καὶ αὔξησις κατὰ ψυχήν· ἡ μὲν γὰρ αἴσθησις δοκεῖ τις ἀλλοίωσις εἶναι, μὴ ἔχον δὲ ψυχὴν οὐθὲν ἂν αἴσθοιτο. ὁμοίως δὲ καὶ περὶ αὐξήσεως καὶ φθίσεως ἔχει· οὐθὲν γὰρ αὐξάνεται οὐδὲ* 70 *φθίνει φυσικῶς μὴ τρεφόμενον, οὐδὲ τρέφεται μὴ ζωῆς μετέχον. ἀλλὰ τοῦτο Ἐμπεδοκλῆς οὐκ εἴρηκεν ὀρθῶς, προστιθεὶς τὴν αὔξησιν συμβαίνειν τοῖς φυτοῖς κάτω μὲν διὰ τὸ τὴν γῆν φύσει οὕτω φέρεσθαι, ἄνω δὲ διὰ τὸ πῦρ. οὔτε γὰρ τὸ κάτω καὶ ἄνω λαμβάνει ὀρθῶς· οὐ γὰρ τὸ αὐτὸ ἑκάστου* 75 *τὸ ἄνω καὶ τὸ κάτω καὶ τοῦ παντός· ἀλλ' ὡς ἡ κεφαλὴ τῶν ζῴων, οὕτως ἡ ῥίζα τῶν φυτῶν ἐστίν· τὸ δὲ αὐτὸ δεῖ λέγειν ὄργανον, ὧν ἂν ᾖ τὸ αὐτὸ ἔργον. ἔτι δὲ τί τὸ συνέχον εἰς τἀναντία φερομένων; τοῦτο γὰρ αἴτιον τὸ τῆς αὐξήσεως καὶ τροφῆς· εἰ δὲ μή, οὐθὲν κωλύσει δι — —.* 80

50. *οὖν* et *ουτη* incerta Torst., *γοῦν οὐκέτι* (? semideletum) Bus. || 56. *ὅμως* E || 61. Cf. ad 415b, 14 || 65. *ἡ* ante *κίνησις* om. E.

III.

lib. II, 421 a, 5—422 a, 23. E. fol. II, r°.

ὅτι οὐ δέχονται τὸν ἀέρα οὐδ' ἀναπνέουσιν· δι' ἣν δ' αἰτίαν ἕτερος ἔσται περὶ αὐτῶν λόγος. Περὶ δὲ ὀσμῆς καὶ τοῦ ὀσφραντοῦ οὐκ ἔστι ῥᾴδιον διορίσαι ὁμοίως τοῖς εἰρημένοις αἰσθητοῖς, τί ἐστιν ἡ ὀσμὴ οὕτως ὡς ὁ ψόφος καὶ τὸ φῶς, αἴτιον δ' ὅτι οὐκ ἔχομεν ἀκριβῆ ταύτην τὴν αἴσθησιν, ἀλλὰ 5 χείριστα ὀσμᾶται ἄνθρωπος τῶν ζῴων, καὶ οὐδεμίαν ἄνευ τοῦ λυπηροῦ καὶ ἡδέος δύναται αἰσθέσθαι ὀσμήν, ὡς τοῦ αἰσθητηρίου ὄντος οὐκ ἀκριβοῦς. ὥσπερ οὖν τοῖς σκληροφθάλμοις ἀδήλους εἰκὸς εἶναι τὰς διαφορὰς τῶν χρωμάτων καὶ συγκεχυμένας, ἀλλὰ τῷ φοβερῷ καὶ τῷ ἀφόβῳ διορίζειν μόνον, 10 οὕτω καὶ τὰ περὶ τὰς ὀσμὰς τοῖς ἀνθρώποις, ἐπεὶ ἔοικέ τε ἀνάλογον ἔχειν πρὸς γεῦσιν καὶ ὅμοια τὰ εἴδη τῶν χυμῶν τοῖς τῆς ὀσμῆς, ἀλλὰ τὴν γεῦσιν ἔχομεν ἀκριβεστέραν διὰ τὸ εἶναι ἁφήν τινα αὐτήν· ταύτην δ' ἔχει τὴν αἴσθησιν ἀκριβεστάτην ἄνθρωπος· ἐν μὲν γὰρ ταῖς ἄλλαις 15 λείπεται πολλῶν ζῴων, τῶν δ' ἁπτῶν αἰσθάνεται μάλιστα ἀκριβῶς. διὸ καὶ φρονιμώτατον τῶν ζῴων ἐστίν. σημεῖον δέ· καὶ γὰρ αὐτῶν τῶν ἀνθρώπων εὐφυεῖς, οἱ δ' ἀφυεῖς εἰσὶ παρ' οὐδὲν αἰσθητήριον ἕτερον ἀλλὰ παρὰ τοῦτο. ὧν μὲν γὰρ ἡ σὰρξ μαλακή, εὐφυεῖς, οἱ δὲ σκληρόσαρκοι ἀφυεῖς 20 τὴν διάνοιαν. ἔστι δ' ὥσπερ χυμὸς ὁ μὲν γλυκὺς ὁ δὲ πικρός, καὶ ὀσμαὶ τὸν αὐτὸν ἔχουσαι τρόπον. ἀλλὰ τὰ μὲν ἔχει τὴν ἀνάλογον ὀσμὴν καὶ χυμόν, τὰ δὲ τοὐναντίον. ὁμοίως δὲ καὶ δριμεῖα καὶ αὐστηρὰ καὶ ὀξεῖα καὶ λιπαρά ἐστιν ὀσμή. ἀλλ' ὥσπερ εἴρηται διὰ τὸ μὴ σφόδρα διαδήλους εἶναι 25 τὰς ὀσμὰς ὥσπερ τοὺς χυμούς, ἀπὸ τούτων εἴληφε τὰ ὀνόματα καθ' ὁμοιότητα τῶν πραγμάτων· ἡ μὲν γλυκεῖα κρόκου καὶ μέλιτος, ἡ δὲ δριμεῖα θύμου καὶ τῶν τοιούτων· τὸν αὐτὸν δὲ τρόπον καὶ ἐπὶ τῶν ἄλλων. ἔστι δ' ὥσπερ καὶ ἡ ἀκοὴ καὶ ἑκάστη τῶν αἰσθήσεων τοῦ τε ἀκουστοῦ 30 καὶ ἀνηκούστου καὶ ὁρατοῦ καὶ ἀοράτου, καὶ ἡ ὄσφρησις τοῦ ὀσφραντοῦ καὶ ἀνοσφράντου. ἀνόσφραντον δὲ τὸ μὲν

III. 14. ταύτην om. E. || 19. τοῦτο] ταύτην E || 20. ἡ σάρξ E (Bus.), ἡ om. E (Torst.) || 26. ἀπό τε E || 27. καὶ ὁμοιότητα E.

παρὰ τὸ ὅλως ἀδύνατον ἔχειν ὀσμήν, τὸ δὲ μικρὰν ἔχον καὶ τὸ φαύλην, ὥσπερ τὸ ἄγευστον ὡσαύτως λέγεται. ἔστι δὲ καὶ ἡ ὄσφρησις διὰ τοῦ μεταξύ, οἷον ὕδατος καὶ ἀέρος· καὶ 35 *γὰρ τὰ ἔνυδρα φαίνεται αἰσθανόμενα ὀσμῆς, καὶ τὰ ἔναιμα καὶ ἄναιμα ὁμοίως, ὥσπερ καὶ τὰ ἐν τῷ ἀέρι· καὶ γὰρ τούτων ἔνια πόρρωθεν ἀπαντᾷ πρὸς τὴν τροφὴν αἰσθανόμενα τὴν ὀσμήν· διὸ καὶ ἔχει ἀπορίαν εἰ πάντα μὲν ὡσαύτως ὀσμᾶται, ὁ δ' ἄνθρωπος ἀναπνέων μέν, μὴ ἀναπνέων δὲ* 40 *ἀλλ' ἢ κατέχων τὸ πνεῦμα ἢ ἐκπνέων οὐκ ὀσμᾶται, οὔτε πόρρω οὔτ' ἐγγύς, οὐδ' ἂν ἐπιθῇ τις εἰς τὸν μυκτῆρα ἐντός. καὶ τὸ μὲν ἐπ' αὐτῷ τῷ αἰσθητηρίῳ τιθέμενον ἀναίσθητον εἶναι κοινὸν πάντων· ἀλλὰ τὸ ἄνευ τοῦ ἀναπνεῖν μὴ αἰσθάνεσθαι ἴδιον ἐπὶ τῶν ἀνθρώπων ἐστίν· τοῦτο δὲ πειρωμένῳ* 45 *δῆλον. εἰ οὖν τὰ ἄναιμα μὴ ἀναπνεῖ, ἑτέραν ἄν τινα ἔχοι αἴσθησιν παρὰ τὰς λεγομένας. ἀλλ' εἴπερ τῆς ὀσμῆς αἰσθάνεται ἀδύνατον· ἡ γὰρ τοῦ ὀσφραντοῦ καὶ εὐώδους καὶ δυσώδους αἴσθησις ὄσφρησίς ἐστιν. φαίνεται δὲ καὶ φθειρόμενα ὑπὸ τῶν ἰσχυρῶν ὀσμῶν ὑφ' ὧνπερ καὶ ἄνθρωπος, οἷον ἀσφάλ-* 50 *του καὶ θείου καὶ τῶν τοιούτων. ὀσφραίνεσθαι μέντοι νῦν ἀναγκαῖον, ἀλλ' οὐκ ἀναπνεῖν. ἀλλ' ἔοικε διαφέρειν τὸ αἰσθητήριον τοῦτο τοῖς ἀνθρώποις πρὸς τὸ τῶν ἄλλων ζῴων, ὥσπερ καὶ τὰ ὄμματα πρὸς τὰ τῶν σκληροφθάλμων· τὰ μὲν γὰρ ἔχει πῶμα καὶ ὥσπερ ἔλυτρον τὰς βλεφαρίδας, ἃς ἂν μὴ* 55 *ἀνασπάσῃ καὶ κινήσῃ, οὐχ ὁρᾷ· τὰ δὲ σκληρόφθαλμα οὐκ ἔχει, ἀλλ' εὐθὺς ὁρᾷ, ὅτι ἂν τεθῇ ἐν τῷ διαφανεῖ· οὕτω καὶ τὸ ὀσφραντικὸν αἰσθητήριον τοῖς μὲν ἀκάλυφον εἶναι, ὥσπερ τὸ ὄμμα, τοῖς δὲ δεχομένοις τὸν ἀέρα ἔχειν ἐπικάλυμμα, ὃ ἀναπνεόντων ἀποκαλύπτεσθαι, διευρυνομένων τῶν φλεβῶν* 60 *καὶ τῶν πόρων. καὶ διὰ τοῦτο τὰ ἀναπνέοντα ἐν τῷ ὑγρῷ οὐκ ὀσμᾶται, ὅτι ἀνάγκη ἀναπνεύσαντα ὀσφρανθῆναι, ἐν δὲ τῷ ὑγρῷ ἀδύνατον τοῦτο ποιεῖν. ἔστι δ' ἡ ὀσμὴ τοῦ ξηροῦ ὥσπερ ὁ χυμὸς τοῦ ὑγροῦ· τὸ δ' ὀσφραντικὸν αἰσθητήριον δυνάμει τοιοῦτον.* 65

Τὸ δὲ γευστόν ἐστιν ἁπτόν τι καὶ τοῦτο αἴτιον τοῦ μὴ εἶναι αἰσθητὸν διὰ τοῦ μεταξὺ ἀλλοτρίου ὄντος σώματος· οὐδὲ γὰρ ἡ ἁφή. καὶ τὸ σῶμα, ἐν ᾧ ὁ χυμός, τὸ γευ-

40. *μέν* om. E ‖ 62. *ἀναπνεύσαντος* E ‖ 63. *τοῦτο* om. E ‖ 64. *τὸ αἰσθητήριον τὸ δυν.* E.

στόν, ἐν ὑγρῷ ὡς ὕλῃ· τοῦτο δ' ἁπτόν τι. διὸ κἂν εἰ ἐν
ὕδατι εἴημεν, αἰσθανόμεθα ἐμβληθέντος γλυκέος, οὐ διὰ 70
τοῦ μεταξὺ δὲ ἡμῖν ἡ αἴσθησις, ἀλλὰ τῷ μειχθῆναι τῷ ὑγρῷ,
ὥσπερ ποτῷ· τὸ δὲ χρῶμα οὐχ οὕτως ὁρᾶται τῷ μείγνυσθαι
οὐδὲ ταῖς ἀπορροίαις. ὡς μὲν οὖν τὸ μεταξὺ οὐθέν ἐστιν· ὡς
δὲ χρῶμα τὸ ὁρατόν, οὕτω γευστὸν χυμός. οὐθὲν δὲ ποιεῖ αἴσθη-
σιν χυμοῦ ἄνευ ὑγρότητος, ἀλλ' ἔχει ἐνεργείᾳ ἢ δυνάμει ὑγρό- 75
τητα, οἷον τὸ ἁλμυρόν· τηκτόν τε γὰρ αὐτὸ καὶ συντηκτικὸν
τῆς γλώττης. ὥσπερ δὲ καὶ ἡ ὄψις ἐστὶ τοῦ τε ὁρατοῦ καὶ
τοῦ ἀοράτου (ὁ γὰρ σκότος ἀόρατος, κρίνει δὲ καὶ τοῦτον ἡ
ὄψις), ἔτι τοῦ λίαν λαμπροῦ (καὶ γὰρ τοῦτό πως ἀόρατον,
ἄλλον τρόπον καὶ ὁ σκότος), ὁμοίως δὲ καὶ ἡ ἀκοὴ ψόφου 80
τε καὶ σιγῆς, ὧν τὸ

IV.

lib. II, 423b, 8—424b, 18. E. fol. 196 r°.

εἴρηται πρότερον ὅτι καὶ δι' ὑμένος ἂν πάντων αἰσθανοί-
μεθα τῶν ἁπτῶν, κἂν εἰ λανθάνοι διείργων, ὁμοίως ἂν ἔχοι-
μεν ὥσπερ νῦν ἐν τῷ ὕδατι καὶ ἐν τῷ ἀέρι· δοκοῦμεν γὰρ
αὐτῶν θιγγάνειν καὶ οὐθὲν εἶναι διὰ μέσου. ἀλλὰ διαφέρει τούτῳ
τὰ ἁπτὰ τῶν ὁρατῶν καὶ ψοφητικῶν, ὅτι ἐκείνων αἰσθανόμεθα 5
τῷ τὸ μεταξὺ ποιεῖν τι ἡμᾶς, τῶν δ' ἁπτῶν οὐχ ὑπὸ τοῦ με-
ταξὺ ἀλλ' ἅμα τῷ μεταξύ, ὥσπερ οἱ διὰ τῆς ἀσπίδος πλη-
γέντες· οὐδὲ γὰρ ἡ ἀσπὶς πληγεῖσα ἐπάταξεν, ἀλλ' ἅμα ἀμ-
φοῖν συνέβη πληγῆναι. ὅλως δ' ἔοικε καὶ ἡ σὰρξ καὶ ἡ γλῶττα,
ὡς ὁ ἀὴρ καὶ τὸ ὕδωρ πρὸς τὴν ὄψιν καὶ τὴν ἀκοὴν καὶ 10
ὄσφρησιν ἔχουσιν, οὕτως ἔχειν πρὸς τὸ αἰσθητήριον ὥσ-
περ ἐκείνων ἕκαστον. αὐτοῦ δὲ τοῦ αἰσθητηρίου ἁπτομένου
οὔτ' ἐκεῖ οὔτ' ἐνταῦθα γένοιτ' ἂν αἴσθησις. οἷον εἴ τις τὸ
σῶμα τὸ λευκὸν ἐπὶ τοῦ ὄμματος θείη τὸ ἔσχατον. ᾗ καὶ δῆλον
ὅτι ἐντὸς τὸ τοῦ ἁπτοῦ αἰσθητικόν. οὕτω γὰρ ἂν συμβαί- 15
νοι ὅπερ ἐπὶ τῶν ἄλλων· ἐπιτιθεμένου γὰρ ἐπὶ τὸ αἰσθητή-
ριον οὐκ αἰσθάνεται, ἐπὶ δὲ τὴν σάρκα ἐπιτιθεμένου αἰσθά-
νεται· ὥστε μεταξὺ ἄρα τοῦ ἁπτικοῦ ἡ σάρξ. ἁπταὶ μὲν οὖν
εἰσὶν αἱ διαφοραὶ τοῦ σώματος ᾗ σῶμα· λέγω δὲ διαφοράς,

70. αἰσθανοίμεθ' ἂν coni. Torst. ‖ 74. τὸ γευστὸν coni. Torst. ‖ IV. 8. οὐδὲ] οὔτε E.

αἳ τὰ στοιχεῖα διορίζουσι, θερμὸν καὶ ψυχρὸν καὶ ξηρὸν καὶ 20
ὑγρόν, περὶ ὧν εἴρηται πρότερον ἐν τοῖς περὶ τῶν στοιχείων. τὸ δὲ
αἰσθητήριον αὐτῶν τὸ ἁπτικόν, καὶ ἐν ᾧ ἡ καλουμένη ἀφὴ ὑπάρ-
χει πρώτῳ, τὸ δυνάμει τοιοῦτόν ἐστι μόριον· τὸ γὰρ αἰσθά-
νεσθαι πάσχειν τί ἐστιν· ὥστε τὸ ποιοῦν οἷον αὐτὸ ἐνεργείᾳ,
τοιοῦτον ποιεῖ ἐκεῖνο τὸ δυνάμει ὄν. διὸ τοῦ ὁμοίως θερμοῦ 25
ἢ ψυχροῦ ἢ σκληροῦ ἢ μαλακοῦ οὐκ αἰσθανόμεθα, ἀλλὰ
τῶν ὑπερβολῶν, ὡς ἂν τῆς αἰσθήσεως οἷον μεσότητός τινος
οὔσης τῆς ἐν τοῖς αἰσθητοῖς ἐναντιώσεως. καὶ διὰ τοῦτο κρί-
νει τὰ αἰσθητά. τὸ γὰρ μέσον κριτικόν· γίνεται γὰρ πρὸς
ὁποτερονοῦν αὐτῶν θάτερον τῶν ἄκρων· καὶ δεῖ ὥσπερ τὸ 30
μέλλον λευκοῦ αἰσθάνεσθαι ἢ μέλανος μηδέτερον εἶναι ἐνερ-
γείᾳ, ἀλλὰ δυνάμει, οὕτω δὴ καὶ ἐπὶ τῶν ἄλλων καὶ ἐπὶ τῆς
ἁφῆς μήτε θερμὸν μήτε ψυχρόν. ἔτι δ' ὥσπερ τοῦ τε ὁρατοῦ καὶ
τοῦ ἀοράτου ἦν πως ἡ ὄψις, ὁμοίως δὲ καὶ αἱ ἄλλαι τῶν ἀντι-
κειμένων, οὕτω καὶ ἡ ἁφὴ τοῦ ἁπτοῦ καὶ ἀνάπτου· ἄναπτον 35
δὲ τό τε μικρὰν πάμπαν ἔχον διαφορὰν τῶν ἁπτῶν, οἷον
πέπονθεν ὁ ἀήρ, καὶ αἱ ὑπερβολαὶ τῶν ἁπτῶν, ὥσπερ τὰ
φθαρτικά. καθ' ἑκάστην μὲν οὖν αἴσθησιν εἴρηται ὡς ἐν
τύπῳ εἰπεῖν.

Καθόλου *δὲ περὶ πάσης αἰσθήσεως δεῖ λαβεῖν ὅτι ἡ* 40
μὲν αἴσθησίς ἐστι τὸ δεκτικὸν τῶν αἰσθητῶν ἄνευ τῆς
ὕλης, οἷον ὁ κηρὸς τοῦ δακτυλίου ἄνευ τοῦ σιδήρου καὶ τοῦ
χρυσοῦ δέχεται τὸ σημεῖον, λαμβάνει δὲ τὸ χαλκοῦν ἢ χρυ-
σοῦν σημεῖον, ἀλλ' οὐχ ᾗ χαλκὸς ἢ χρυσός. ὁμοίως δὲ
καὶ ἡ αἴσθησις ἑκάστη ὑπὸ τοῦ ἔχοντος χρῶμα ἢ ψόφον 45
ἢ χυμὸν πάσχει, ἀλλ' οὐχ ᾗ ἕκαστον ἐκείνων λέγεται, ἀλλ'
ᾗ τοιόνδε καὶ κατὰ τὸν λόγον. αἰσθητήριον δὲ πρῶτον, ἐν
ᾧ ἡ τοιαύτη δύναμις. ἔστι μὲν οὖν τὸ αὐτό, τὸ δ' εἶναι ἕτε-
ρον· μέγεθος μὲν γὰρ ἄν τι εἴη τὸ αἰσθανόμενον· οὐ μέντοι
τό γε αἰσθητικῷ εἶναι ἢ αἰσθήσει μεγέθει ἐστὶν εἶναι, ἀλλὰ λό- 50
γος τις καὶ δύναμις ἐκείνου. φανερὸν δ' ἐκ τούτων καὶ διὰ
τί ποτε τῶν αἰσθητῶν αἱ ὑπερβολαὶ φθείρουσι τὰς αἰσθή-
σεις· ἂν γὰρ ᾖ ἡ κίνησις ἰσχυροτέρα τοῦ αἰσθητηρίου, λύε-
ται ὁ λόγος, τοῦτο δ' ἦν αἴσθησις, ὡσπερανεὶ ἡ συμφω-

20. *αἷς* E || 24. *οἷον* om. E. || 27. *ὡς ἂν τοῦ αἰσθητηρίου τῆς αἰσθήσεως* E || 29. *κριτικόν· γίνεται γὰρ πρὸς* om. E || 32. *δὴ*] *δὲ* E || 37. *ἁπτῶν ἄναπτοι ὥσπερ* E || 54. *ἦν ἡ* coni. Torst.

νία καὶ ὁ τόνος σφόδρα κρουομένων τῶν χορδῶν. καὶ διὰ 55
τί ποτε τὰ φυτὰ οὐκ αἰσθάνεται, ἔχοντά τι μόριον ψυχι-
κὸν καὶ πάσχοντα ὑπὸ τῶν ἁπτῶν· καὶ γὰρ ψύχεται καὶ
θερμαίνεται· αἴτιον δὲ τὸ μὴ ἔχειν μεσότητα, μηδὲ τοιαύ-
την ἀρχήν, οἵαν τὰ εἴδη τῶν αἰσθητῶν δέχεσθαι, ἀλλὰ
μετὰ τῆς ὕλης πάσχειν. ἀπορήσειε δ᾽ ἄν τις, ἆρα πάθοι ἂν 60
ὑπ᾽ ὀσμῆς τὸ μὴ δυνάμενον ὀσφρανθῆναι, ἢ ὑπὸ χρώματος τὸ
μὴ δυνάμενον ἰδεῖν· ὁμοίως δὲ καὶ ἐπὶ τῶν ἄλλων. εἰ δ᾽ ἡ
ὀσμὴ τὸ ὀσφραντόν, εἴ τι ποιεῖ, τὴν ὄσφρησιν ποιεῖ ὀσμή.
ὥστε οὐθὲν πάσχειν τῶν ἀδυνάτων ὀσφρανθῆναι. ὁ δ᾽ αὐ-
τὸς λόγος καὶ ἐπὶ τῶν ἄλλων· οὐδὲ τῶν δυνατῶν, ἀλλ᾽ ᾗ 65
αἰσθητικὸν ἕκαστον. ἅμα δὲ δῆλον καὶ οὕτως. οὔτε γὰρ
ψόφος οὔτε τὸ φῶς καὶ σκότος οὔτε ἡ ὀσμὴ οὐθὲν ποιεῖ τὰ
σώματα, ἀλλ᾽ ἐν οἷς ἐστίν, οἷον ἀὴρ ὁ μετὰ τῆς βροντῆς
διέστησε τὸ ξύλον. ἀλλὰ δὴ τὰ ἁπτὰ καὶ οἱ χυμοὶ ποιοῦσιν· εἰ
γὰρ μή, ὑπὸ τίνος ἂν πάσχοι τὰ ἄψυχα ἢ ἀλλοιοῖτο; ἆρ᾽ 70
οὖν κἀκεῖνα ποιεῖ; ἢ οὐ πᾶν σῶμα παθητικὸν ὑπ᾽ ὀσμῆς
καὶ ψόφου· καὶ τὰ πάσχοντα ἀόριστα, καὶ οὐ μένει, οἷον
ἀήρ· ὄζει γὰρ ὡς παθών τι. τί οὖν ἐστὶ τὸ ὀσμᾶσθαι παρὰ
τὸ πάσχειν τι; ἢ τὸ μὲν ὀσμᾶσθαι καὶ αἰσθάνεσθαι, ὁ δ᾽
ἀὴρ παθὼν τοῦτο ταχὺ αἰσθητὸς γίγνεται. 75

59. *οἷον* E ‖ 61. ἢ om. E ‖ 63. *ἡ ὀσμή* coni. Torst. ‖ 71. ἢ om. E ‖ 74. *καί*] *αι* E.

NOTES.

BOOK I. CHAPTER I.

402 a 1—22. In this introductory chapter A. first touches upon the importance and utility, especially for physics, of an enquiry into the soul, and next enlarges upon the difficulties besetting such an enquiry. Its object is to determine the nature of the soul and its essential attributes [§ 1]. There is the general logical difficulty, viz., the absence of any uniform recognised method of obtaining definitions and the uncertainty as to the premisses from which the investigation should start [§ 2].

402 a 1 τῶν...4 τιθείημεν. Universam hanc periodum sic recte interpreteris: Quarum rerum cognitio pulchra et honore digna est, earum etiam investigatio est pulchra et honore digna: quarum igitur illa magis est honore digna, earum et haec. At pulcherrima facile est animae cognitio: pulcherrima igitur etiam investigatio eius quid sit (Torstrik, p. 112). According to Philop. (24, 3 sqq., 17 sqq.) these apparently harmless propositions caused Alex. Aphr. so much perplexity that he condemned as spurious the whole passage a 1 *μᾶλλον* ...3 *εἶναι* and explained *δι' ἀμφότερα ταῦτα* as *διὰ τὸ καλὴν καὶ τιμίαν εἶναι.* If the report is correct, Alexander's suspicions must have been aroused because he supposed the supremacy of metaphysics to be challenged and even the place claimed for psychology among the natural sciences to be inconsistent with such passages as, e.g., *Eth. Nic.* 1141 a 33—b 2. See note on 402 a 4 **ἐν πρώτοις.**

a 1. τῶν καλῶν καὶ τιμίων τὴν εἴδησιν. The partitive genitive becomes a predicate here after *ὑπολαμβάνοντες.* This is fairly common with *εἶναι*, e.g. *infra* 402 a 10 *ἐστὶ τῶν χαλεπωτάτων*, 417 a 24, 422 a 6. So also with *γίγνεσθαι*, *Pol.* 1304 a 16 *γενόμενος τῶν ἀρχόντων*, as in other writers; with *ποιεῖν*, *Rhet.* II. 23 § 11, 1398 b 13 *Λακεδαιμόνιοι Χίλωνα τῶν γερόντων ἐποίησαν*; with *τιθέναι*, *τίθεσθαι*, *γράφειν* [Kühner-Gerth, *Gr. Gr.* § 418, p. 375]. After *ὑπολαμβάνειν* A. omits upon occasion the infinitive [here *εἶναι*], thus converting the verb into one of incomplete predication, and assimilating its construction to that of *τιθέναι* (405 b 18, 26), *τίθεσθαι* (405 a 15), *ποιεῖν* (404 b 10, 31, 405 b 13 sq., 19), *καλεῖν* (405 b 28 sq.) when similarly used. Thus, to confine ourselves to I., c. 2, the infinitive *εἶναι* after *ὑπολαμβάνειν* is found 403 b 31, 404 a 8, 22 sq. and omitted 404 b 8, 405 a 5, 20, b 7. The same freedom of construction is permitted with *λέγειν*, see 404 a 5, 21 compared with 26. For *τιμίων* cf. 430 a 18 sq., *De Part. An.* I. 5, 644 b 22—645 a 1, *Metaph.* 1074 b 21 (where it is an attribute of *νοῦς*), 26, 30 (where it is applied to the object of thought).

The rare word **εἴδησις** is apparently used by A. here only. It may be his own coinage, for, though occurring in Theophrastus (e.g. *frag.* LXXXIX. § 4), in scholiasts on Homer and Sophocles, and, as might be expected, in commentators like Philop., it seems to have found little favour. Later it was affected by Clement of Alexandria and Sextus Empiricus. Hesychius explains it by *γνῶσις*, and like *γνῶσις*, 402 a 5, it is a comprehensive, general term for knowledge of

any and every kind. Cf. *Ind. Ar.* 158 b 42 pro synonymis vel in eodem sententiae contextu vel in iisdem formulis γνωρίζειν, γιγνώσκειν, γνῶσιν λαμβάνειν, μανθάνειν, εἰδέναι, ἐπίστασθαι leguntur. In 402 b 16 sqq. γνῶναι, θεωρῆσαι, κατιδεῖν, εἰδέναι, γνωρίζειν are used in succession. Like other verbal nouns in -ις εἴδησις is strictly the act or process of knowing, as νόησις is thinking, ποίησις producing, ἄκουσις hearing, ὄρεξις longing, αὔξησις growing, σύνθεσις combining, though sometimes the strict sense is not maintained, ὄψις and αἴσθησις being notoriously ambiguous.

a 1, 2. μᾶλλον δ' ἑτέραν ἑτέρας. Supply τῶν καλῶν καὶ τιμίων. Cf. *Metaph.* 996 b 16 αὐτῶν δὲ τούτων ἕτερον ἑτέρου μᾶλλον [int. εἰδέναι φαμέν]. A. is fond of arranging kinds of knowledge in a scale of increasing dignity or intrinsic worth. Thus in *Metaph.* 980 a 27—981 a 12 and *Anal. Post.* II. 19, 99 b 34—100 a 9 we have such a scale of knowledge rising from sense-perception through memory and experience to art, and finally to science (ἐπιστήμη). The sciences themselves are variously classified. See *Anal. Post.* I. 13, 78 b 34—79 a 6. In *Metaph.* 1026 a 18—23 a scheme of three theoretical sciences is projected in outline,—First Philosophy (called θεολογική) is the highest, next comes Mathematics, next Physics, 1064 b 1—6. Cf. *Top.* VIII. 1, 157 a 8 τὸ δὲ διαιρεῖσθαι τοιοῦτον οἷον ὅτι ἐπιστήμη ἐπιστήμης βελτίων ἢ τῷ ἀκριβεστέρα εἶναι ἢ τῷ βελτιόνων.

a 2. κατ' ἀκρίβειαν. The meaning of the term varies according as it is applied to ἀπόδειξις or ἐπιστήμη. (1) The rigorous accuracy of a demonstration depends upon the correctness of the reasoning and the truth of the premisses. In sciences which deal with the contingent it often happens that premisses and therefore conclusions are only general, not universal, truths. The rigorous accuracy of mathematical proof is not to be looked for in ethics (*Eth. Nic.* 1094 b 11—27) because the premisses are contingent. Cf. 1104 a 1—6. In this sense all scientific reasoning and all theoretical science is exact, and to ἀκριβέστερον δεικνύναι, *Metaph.* 1064 a 6 sq., is opposed μαλακώτερον δεικνύναι, to reason loosely or inconclusively. But (2) in another sense ἀκριβής is applied to a science or knowledge in respect not of the proof but of the method of treatment employed. It then means "abstract," like ἁπλοῦς, and it is implied that the objects with which such a science deals are themselves by comparison more abstract, more simple and logically prior; for ἀκρίβεια is a relative term. Thus of First Philosophy, the highest of the sciences, and also the most abstract, A. says (*Metaph.* 982 a 25): "Those amongst the sciences are most exact which have especially to do with the first causes, for the sciences which start from fewer premisses are more exact than those which are complicated with additional determinations: Arithmetic, for example, is more exact than Geometry." On this Bonitz *ad loc.*, "ἀκρίβειαν sive exactam et omnibus numeris perfectam cognitionem tum maxime possumus consequi, cum in simplicissimis versamur notionibus. Simplicissimae autem notiones eaedem maxime sunt universales et summae et sua natura primae...Itaque ἀκρίβειαν praecipuam qui tribuunt sapientiae [i.e. First Philosophy], eam referre debent ad prima et simplicissima rerum genera." *Ib.* 1078 a 9 καὶ ὅσῳ δὴ ἂν περὶ προτέρων τῷ λόγῳ καὶ ἁπλουστέρων [sc. ἐπιστήμη ἐστί], τοσούτῳ μᾶλλον ἔχει τἀκριβές· τοῦτο δὲ τὸ ἁπλοῦν ἐστίν. ὥστε ἄνευ τε μεγέθους μᾶλλον ἢ μετὰ μεγέθους, καὶ μάλιστα ἄνευ κινήσεως. ἐὰν δὲ κίνησιν, μάλιστα τὴν πρώτην· ἁπλουστάτη γάρ, καὶ ταύτης ἡ ὁμαλή. ὁ δ' αὐτὸς λόγος καὶ περὶ ἁρμονικῆς καὶ ὀπτικῆς· οὐδετέρα γὰρ ᾗ ὄψις ἢ ᾗ φωνὴ θεωρεῖ, ἀλλ' ᾗ γραμμαὶ καὶ ἀριθμοί· οἰκεῖα μέντοι ταῦτα πάθη ἐκείνων. καὶ ἡ μηχανικὴ δὲ ὡσαύτως. First Philosophy considers its objects, *quâ* existent, as possessing but one attribute, that which is

postulated in all the rest; Arithmetic regards its objects as numerable, but takes no account of extension; Geometry complicates its investigations by regarding its objects, ἐκ προσθέσεως, not only as numerable, but also as extended. All mathematical sciences are more abstract than the physical sciences, for the former treat their objects as unmoved, while physics takes account of motion. Optics does not deal with the physiological properties of vision, nor harmonics with those of voice: the former treats the ray of light as a line, the latter a chord as the ratio of two numbers: and so on. It often happens that the more abstract science discovers the cause which is necessary to explain the facts investigated by a more concrete science. *Anal. Post.* I. 27, 87 a 31 Ἀκριβεστέρα δ' ἐπιστήμη ἐπιστήμης καὶ προτέρα (1) ἥ τε τοῦ ὅτι καὶ διότι ἡ αὐτή, ἀλλὰ μὴ χωρὶς τοῦ ὅτι τῆς τοῦ διότι, καὶ (2) ἡ μὴ καθ' ὑποκειμένου τῆς καθ' ὑποκειμένου, οἷον ἀριθμητικὴ ἁρμονικῆς, καὶ (3) ἡ ἐξ ἐλαττόνων τῆς ἐκ προσθέσεως, οἷον γεωμετρίας ἀριθμητική. λέγω δ' ἐκ προσθέσεως, οἷον μονὰς οὐσία ἄθετος, στιγμὴ δὲ οὐσία θετός· ταύτην ἐκ προσθέσεως. Of these three conditions it is easy to see that the last is the most fundamental and that the others rest upon it. Trendelenburg's translation "quod vel acrius ingenii acumen requirit" has no sort of justification, and the discrepancy which he discovers between these words and a 10 is imaginary. First philosophy is at once the most abstract and the most difficult of the sciences (*Metaph.* 982 a 24 sq.), and psychology presents more difficulties than the other biological sciences precisely because it is more abstract than the rest. Its ἀκρίβεια is relative. In *Anal. Post.* II. 19, 99 b 33 A. speaks hypothetically of a (δύναμις) τούτων τιμιωτέρα κατ' ἀκρίβειαν, and *ib.* 99 b 27 of ἀκριβεστέρας γνώσεις ἀποδείξεως. Of course as a matter of fact (100 b 8) οὐδὲν ἐπιστήμης ἀκριβέστερον. Plato, *Philebus* 59 D, uses of νοῦς and φρόνησις the words ἅ γ' ἄν τις τιμήσειε μάλιστ' ὀνόματα and ἀπηκριβωμένα.

a 2 ἢ τῷ...3 εἶναι. The subject-matter (τὸ ἐπιστητόν, the province or γένος with which the science deals) also helps to determine the place of a science in the scale, quite independently of the question whether the treatment is abstract or concrete. For this reason in the realm of Nature the sciences which deal with the πρῶτον στοιχεῖον, ἄφθαρτον, ἀγένητον, κύκλῳ φορητόν, rank higher than the rest: *De Cael.* III. 1, 298 b 6 sqq. Cf. *Metaph.* 1026 a 21 καὶ τὴν τιμιωτάτην (sc. ἐπιστήμην) δεῖ περὶ τὸ τιμιώτατον γένος εἶναι. *Ib.* 1064 b 5 βελτίων δὲ καὶ χείρων ἑκάστη λέγεται κατὰ τὸ οἰκεῖον ἐπιστητόν. The genitive of relation expressing the object of a cognition, as of any other mental act, may be freely illustrated from the terminology of this treatise in reference to sensation and the sensible object. Cf., e.g., 418 a 13, 26, 421 b 4—6, 422 a 20—29, 422 b 23—25, 424 a 10—12, 426 b 8, 434 b 18.

a 3. δι' ἀμφότερα ταῦτα, "for both these reasons," i.e. for its exactitude (ἀκρίβεια) and for the importance of its subject-matter. In this treatise our subject is τὸ ἔμψυχον ζῷον ᾗ ἔμψυχον, and we deal preeminently with the form (which is ἀκίνητον) not with the matter; and in proportion as we do this we regard the ἔμψυχον ζῷον not concretely as made up of σάρξ, ὀστοῦν, νεῦρον, and the like, but abstractly as living, moving, perceiving, thinking, these attributes being due to soul as cause. Cf. *notes inf.* on a 9.

a 4. ἱστορίαν loco nostro non esse eandem ac τὴν εἴδησιν, sed significare indagationem et investigationem, ex universi prologi ratione intelligitur: omnia enim spectant ad viam ac rationem qua ad animae cognitionem perveniatur (Torst.). A. modestly styles the science which he is inaugurating a study: an enquiry concerning soul. As applied to his Natural History, ἱστορίαι περὶ ζῴων, the term denotes researches undertaken and materials collected to serve as the basis of a future science.

a 4. ἐν πρώτοις, relatively to other natural sciences. Cf. *De Cael.* III. 7, 306 a 27 sq., where mathematics are styled *αἱ ἀκριβέσταται ἐπιστῆμαι.* The only conceivable ground on which absolutely first rank can be claimed for psychology is the doctrine of *νοῦς χωριστός* 430 a 17, but I cannot see that A. makes the claim.

a 5. πρὸς ἀλήθειαν ἅπασαν. How necessary it is for practical philosophy can be seen from *Eth. Nic.* I. 13. (Cf. Them. 1, 20—2, 6 H., 2, 18—28 Sp.)

a 6. πρὸς τὴν φύσιν, to the study of nature, of which biology was and is a main department. The importance of soul as *πηγὴ καὶ ἀρχὴ πάσης κινήσεως, ἴσως μὲν καὶ πᾶσι τοῖς σώμασι, μάλιστα δὲ τοῖς τῶν ζῴων καὶ τῶν φυτῶν* (Them. l.c.), will be greatest to the science, viz. *φυσική*, which treats its subject-matter so far as it is capable of motion [*Metaph.* 1026 a 12]. **ἔστι γάρ**, sc. *ἡ ψυχή*. **οἷον ἀρχή.** More explicitly 413 b 11 *ἐστὶν ἡ ψυχὴ τῶν εἰρημένων τούτων ἀρχὴ καὶ τούτοις ὥρισται, θρεπτικῷ, αἰσθητικῷ, διανοητικῷ, κινήσει.* For the proof see 415 b 8—416 a 18, where the various senses in which soul is *τοῦ ζῶντος σώματος αἰτία καὶ ἀρχή* are discriminated and we are plainly told that the bodies of animals and plants are instruments of the soul (415 b 18 sq.). Why *οἷον*? Confuse legentis (Zabarella): cf. 414 a 9 *οἷον ἐνέργεια.* The mode of expression should mislead no one: A. firmly holds that soul is *ἀρχή*, as that health l.c. is *ἐνέργεια.* It remains to be seen in what precise sense soul is *ἀρχή*. If we compare the expression *τὰς ἐν ὕλης εἴδει αἰτίας* applied to the *ἀρχαί* of the Ionian philosophers (*Metaph.* 984 a 17), we may perhaps see a characteristic reservation for which the vagueness of the prevailing views (cf. I., c. 2) is responsible.

a 7 ἐπιζητοῦμεν...10 ὑπάρχειν. In this section A. maps out his enquiry. If there is a science of soul it must conform to the conditions laid down in *Anal. Post.* for all sciences and particularly for all physical sciences, as it is plainly a branch of physics. On the formal side the main work of the enquirer will be to delimit his province, to define it and to deduce the essential properties: *Anal. Post.* I. 7, 75 b 7 sq., *Metaph.* 1004 b 7 *ἐκείνης τῆς ἐπιστήμης (ἐστὶ) καὶ τί ἐστι γνωρίσαι καὶ τὰ συμβεβηκότα αὐτοῖς.*

a 7. θεωρῆσαι καὶ γνῶναι. *Καὶ* explicative = "that is," *γνῶναι* being the more general term. As to *θεωρεῖν* see *Ind. Ar.* 328 a 40 apud animum contemplari. The precise and specialised meaning can be best gathered from *De A.* itself, esp. 417 a 21—b 26 and 432 a 8 sq.: in particular, to apply knowledge already acquired, *ἐνεργεῖν κατὰ τὴν ἐπιστήμην* 412 a 9—11, 25 sq., 417 a 28 sq., b 5 sq. Here, however, the verb is used more generally without any such implication, the two terms *θ.* and *γ.* being as nearly synonymous as in 402 b 17 except that even in this unrestricted sense *θεωρεῖν* is always an active operation, not a latent capacity. It is the act of apprehending by mental vision (and so *σκοπεῖσθαι, ἐπισκοπεῖν* are synonyms): e.g. *Phys.* III. 5, 204 b 4, 10 *λογικῶς μὲν σκοπουμένοις...φυσικῶς δὲ θεωροῦσιν...*, *Metaph.* 1003 a 21, 23, 1004 b 1 sq. Cf. *Anal. Post.* I. 18, 81 b 2 *ἀδύνατον δὲ τὰ καθόλου* **θεωρῆσαι** *μὴ δι' ἐπαγωγῆς, ἐπεὶ καὶ τὰ ἐξ ἀφαιρέσεως λεγόμενα ἔσται δι' ἐπαγωγῆς* **γνώριμα ποιεῖν.**

a 8. καὶ τὴν οὐσίαν, "that is to say, its essence": *καὶ* again explicative. *Ind. Ar.* 545 b 23 pariter atque *εἶδος* vel *λόγος* cum *οὐσία* syn conjungitur *φύσις*, *Metaph.* 1014 b 36, 1070 a 9, 12, 1031 a 30, b 1, *De Part. An.* II. 1, 646 a 25 sq. *De Cael.* II. 4, 286 b 11 *τῇ οὐσίᾳ καὶ τῇ φύσει*, *Phys.* II. 1, 193 a 9 *ἡ φύσις καὶ ἡ οὐσία*, *Metaph.* 1053 b 9 *κατὰ τὴν οὐσίαν καὶ τὴν φύσιν*, *ib.* 1019 a 2 *κατὰ φύσιν καὶ οὐσίαν*, 1064 b 11. Our first task is to discover *τί ἐστιν ἡ ψυχή*. We must obtain a definition which will express its "essential nature." This last expression, retained in modern writings, attests how completely *φύσις* and *οὐσία* in the sense here intended are synonymous.

a 8. εἶθ' = next in order. Z. contrasting 415 a 14—16 remarks: hic loquitur de ordine doctrinae, ibi de via, non de ordine. Z. further maintains that this programme is so far carried out that the whole of *De A.* treats properly of the τί ἐστι, the nature of soul, its συμβεβηκότα or accidents being reserved for the *Parva Naturalia*, appealing to *De Sensu* 436 a 1—5. But Z. is obliged to admit that in III. cc. 4—8 the treatment of intellect is exhaustive, including properties as well as essential nature. There is no need to lay such stress on this formal division of the task before us. Every science must delimit its γένος, and define its subject, before it can proceed to deduce the essential properties: *Metaph.* 1003 a 21—26, b 19—22, 1004 b 5—8, 10—17, 1025 b 3 sqq., esp. b 5—13 and 1063 b 36—1064 a 7, which is a convenient summary of *Metaph.* E. 1.

a 8. ὅσα συμβέβηκε, i.e. all essential attributes, often styled τὰ καθ' αὑτὰ συμβεβηκότα and (*Anal. Post.* and *Metaph.*) τὰ καθ' αὑτὰ ὑπάρχοντα, also (402 a 15) τὰ κατὰ συμβεβηκὸς ἴδια (= properties). The usual example is the property of a triangle that its angles are equal to two right angles (402 b 20). This forms no part of the definition, but can be deduced from it. *Ind. Ar.* 713 b 43 inde συμβαίνειν, συμβεβηκέναι, συμβεβηκός id dicitur, quod cum non insit ipsi alicuius rei notioni, tamen concludendo ex ea necessario colligitur. It is not enough that a science should delimit its province and obtain a definition. From this definition it must deduce all the essential properties of the subject under investigation. We shall presently see (402 b 16—403 a 2) that essence and properties are mutually implicated, and that in some cases the study of the property is the best road to the determination of the essence. In this treatise there are various designations and enumerations of the attributes of soul (or, more correctly, of the animate being which possesses the soul *quâ* animate), e.g. ἔργα καὶ πάθη (409 b 15, cf. 407 b 18), ἐνέργειαι καὶ πράξεις (415 a 19), παθήματα (403 a 11, cf. 403 a 5—7, 16—18, 411 a 26—b 5). Cf. *De Sensu* 1, 436 a 1—18. They are seldom styled συμβεβηκότα. See, however, 409 b 14. In general terms, whatever the possessor of soul does or suffers in virtue of such possession, 411 b 2 sq. ποιοῦμέν τε καὶ πάσχομεν (cf. 403 a 6 sq. πάσχειν οὐδὲ ποιεῖν), A. regards as a "function" or operation of soul.

In this well-established sense συμβεβηκός = συμβ. καθ' αὑτό. But the term is ambiguous, and is more commonly used by A. to denote something quite different, i.e. an accident, a purely fortuitous attribute, white and musical in man being the stock instances (*Ind. Ar.* 714 a 20). As συμβεβηκότα in this latter sense are never necessary, are neither universal nor even general attributes, they do not fall under demonstrative science. *Metaph.* 1025 a 14 συμβεβηκὸς λέγεται ὃ ὑπάρχει μέν τινι καὶ ἀληθὲς εἰπεῖν, οὐ μέντοι οὔτ' ἐξ ἀνάγκης οὔτ' ἐπὶ τὸ πολύ, οἷον εἴ τις ὀρύττων φυτῷ βόθρον εὗρε θησαυρόν: 1026 b 27—37. Compare for the two meanings *Phys.* I. 3, 186 b 17 εἰ γὰρ μὴ ὅπερ ὄν τι, συμβεβηκότα ἔσται. ἢ οὖν τῷ ἀνθρώπῳ ἢ ἄλλῳ τινὶ ὑποκειμένῳ...συμβεβηκός τε γὰρ λέγεται τοῦτο, ἢ ὃ ἐνδέχεται ὑπάρχειν καὶ μὴ ὑπάρχειν [accident proper, non-essential attribute], ἢ οὗ ἐν τῷ λόγῳ ἐνυπάρχει τὸ ᾧ συμβέβηκεν, ἢ ἐν ᾧ ὁ λόγος ὑπάρχει ᾧ συμβέβηκεν, οἷον τὸ μὲν καθῆσθαι ὡς χωριζόμενον, ἐν δὲ τῷ σιμῷ ὑπάρχει ὁ λόγος ὁ τῆς ῥινὸς ᾗ φαμὲν συμβεβηκέναι τὸ σιμόν. *Anal. Post.* I. 22, 83 b 17—24 ὑπόκειται δὲ ἓν καθ' ἑνὸς κατηγορεῖσθαι, αὐτὰ δὲ αὑτῶν, ὅσα μὴ τί ἐστι, μὴ κατηγορεῖσθαι. συμβεβηκότα γάρ ἐστι πάντα, ἀλλὰ τὰ μὲν καθ' αὑτά, τὰ δὲ καθ' ἕτερον τρόπον· ταῦτα δὲ πάντα καθ' ὑποκειμένου τινὸς κατηγορεῖσθαί φαμεν, τὸ δὲ συμβεβηκὸς οὐκ εἶναι ὑποκείμενόν τι. οὐδὲν γὰρ τῶν τοιούτων τίθεμεν εἶναι, ὃ οὐχ ἕτερόν τι ὂν λέγεται ὃ λέγεται, ἀλλ' αὐτὸ ἄλλοις, καὶ ἄλλ' ἄττα καθ' ἑτέρου [i.e. ἀλλ' αὐτὸ sc. τὸ συμβεβηκός, ἄλλοις sc. συμβεβηκέναι φαμὲν καὶ ἄλλ' ἄττα καθ' ἑτέρου sc. κατηγορεῖσθαι]. Cf. *Phys.* VIII. 5, 256 b 9 sq. οὐ γὰρ ἀναγκαῖον τὸ συμβεβηκός,

ἀλλ' ἐνδεχόμενον μὴ εἶναι. ἐὰν οὖν θῶμεν τὸ δυνατὸν εἶναι, οὐδὲν ἀδύνατον συμβήσεται, ψεῦδος δ' ἴσως. **περὶ αὐτήν**, i.q. *τὴν ψυχήν*. The usual construction with *συμβαίνειν* as with *ὑπάρχειν* is the dative, 402 b 18 *ταῖς οὐσίαις*. Properties belong to or go with the things of which they are predicated. For the variant with *περὶ* c. acc. cf. *Metaph.* 997 a 29 *περὶ ἕκαστον γένος*, 33 *περὶ τὴν οὐσίαν*, *De Part. An.* I. 5, 645 b 1 *τὰ συμβεβηκότα περὶ ἕκαστον γένος, ὅσα καθ' αὑτὰ... ὑπάρχει τοῖς ζῴοις*.

a 9. ὧν τὰ μὲν...δοκεῖ. As a logical term *πάθος*, like *συμβεβηκὸς* and *ὑπάρχον*, denotes an attribute: *Metaph.* 1037 b 16 *ὅταν ὑπάρχῃ* [sc. *θατέρῳ θάτερον*] *καὶ πάθῃ τι τὸ ὑποκείμενον*: cf. 403 a 17, 25, 403 b 17 and *notes*. Regarded as attributes of a subject, *ὑποκείμενον*, the active operations, no less than the passive affections, of soul are *ἴδια πάθη*, as they are *συμβεβηκότα καθ' αὑτά*: and this applies to all the acts or operations enumerated 411 a 26 sqq. See also 417 a 14 sqq., b 12 sqq., 431 a 6 sq. On the surface the words before us imply that there are thought (*δοκεῖ*) to be properties of soul which are not properties of the animal to whom the soul belongs. What are they? *ζῷον* = *ἔμψυχον σῶμα*, and when the question arises below (403 a 3—10) A. inclines to the view that there are none such.

a 9. τὰ δὲ δι' ἐκείνην καὶ τοῖς ζῴοις ὑπάρχειν. This is the normal type of attributes of soul, whether active operations or passive states. As expressed below, 403 a 3—10, the body as well as the soul shares in them, and therefore their definition ought to take account of the body (403 a 16—27), and psychology becomes a branch of physics (403 a 27—b 7); in other words this second class of attributes or "states" of soul are *ἀχώριστα τῆς φυσικῆς ὕλης τῶν ζῴων* (403 b 17). If so, the subject, *ὑποκείμενον*, to which they belong is properly the animal (*ζῷον ἔμψυχον*), and we are often reminded that such is really the fact, e.g. 408 b 13—15, 411 b 2 *ποιοῦμεν ἢ πάσχομεν*, 415 b 8, 11, 416 b 22, 434 b 12; cf. *Metaph.* 1038 b 5 *διχῶς ὑπόκειται, ἢ τόδε τι ὂν ὥσπερ τὸ ζῷον τοῖς πάθεσιν, ἢ κτέ.*

a 10. ἐστὶ τῶν χαλεπωτάτων, i.q. *ἐστὶ χαλεπώτατον*. This predicative use of the partitive gen. has become a mere trick of style, e.g. *Pol.* 1339 a 17 *ταῦτα γὰρ καθ' αὑτὰ μὲν οὔτε τῶν σπουδαίων ἀλλ' ἡδέα*. Cf. *τῶν ἀδυνάτων ἐστίν*, *Pol.* 1287 b 22, 1294 a 1, 1329 a 9; *ἐστὶ τῶν ἀναγκαιοτάτων*, *ib.* 1273 a 32. Occasionally the fuller form is retained as below, 406 a 2 *ἕν τι τῶν ἀδυνάτων*. Cf. *Pol.* 1291 a 8, 1332 b 32, 1340 b 23 sq.; *Ind. Ar.* 149 b 2; Waitz ad *Top.* IV. 2, 121 b 36.

a 11. λαβεῖν τινὰ πίστιν. As generally, *λαβεῖν* means to "get," "ascertain" or "find out," just as *ἔχειν* = to have as a result of enquiry (cognovisse). *πίστις*, like Latin *fides*, is trustworthy information, or "ground of belief."

a 11 καὶ γὰρ...12 ἑτέροις. Why the enquiry is so difficult is now explained; *γάρ* introduces the reason, which, stated in the briefest terms, is the absence of any uniform logical method of obtaining a real definition. The complaint is familiar to the readers of *Anal. Post.*, much of Bk II. of that work being devoted to pointing out the defect and proposing various ways of remedying it. **πολλοῖς ἑτέροις**, masculine, other enquirers, distinct from *ὁ περὶ ψυχῆς ἐπισκοπῶν*.

a 12. τοῦ περὶ τὴν οὐσίαν καὶ τὸ τί ἐστι, sc. *ζητήματος*, *λέγω* having no effect upon the construction. *καὶ* is again explicative, *οὐσία* is now glossed by *τὸ τί ἐστι* as just before (a 7) by *φύσις*. *τί ἐστι* has become a sort of indeclinable noun. Cf. *τί ἦν εἶναι* and various prepositional phrases, e.g. *καθ' ἕκαστον*, *καθόλου*. *Ind. Ar.* 763 b 10 qui quaerit *τί ἐστι* is ipsam rei naturam quaerit, non quaerit eius accidentia. ad eam quaestionem, qua respondetur formula *τὸ τί ἐστι* nominis vim induit, cuius usus eandem habet varietatem, ac verbi *εἶναι* et

nominis οὐσία. But the answer to the question τί ἐστι is wider than a true definition. It might be any rough description sufficient to identify the thing in question provided it excluded everything merely unessential or accidental, leaving only what is ἀναγκαῖον. Thus the genus will answer the question τί ἐστι, but without the *differentia* would not be a complete definition. See below a 23, where the *summa genera* are meant, and *Top.* I. 5, 102 a 31—35. Compare *Top.* VI. 5, 142 b 27 τὸ δὲ γένος βούλεται τὸ τί ἐστι σημαίνειν, καὶ πρῶτον ὑποτίθεται τῶν ἐν τῷ ὁρισμῷ λεγομένων. Or again, either ὕλη or τὸ σύνολον ἐξ ὕλης καὶ εἴδους would answer the question τί ἐστι, but would not furnish the definition we seek. We arrive at the true definition when we have collected all that can be thus predicated of the thing ἐν τῷ τί ἐστιν, and arranged these various parts in the proper order. *Ind. Ar.* 763 b 47 si quis τὰ ἐν τῷ τί ἐστι κατηγορούμενα et omnia compleverit et suo ordine posuerit, τὸ τί ἦν εἶναι vel τὸν ὁρισμόν constituit. *Anal. Post.* I. 22, 82 b 37 sqq., *Top.* VII. 3, 153 a 15—21, *Anal. Post.* II. 6, 92 a 7 τὸ τί ἦν εἶναι τὸ ἐκ τῶν ἐν τῷ τί ἐστιν ἴδιον (Wz., ἰδίων Bk.). Cf. also *De A.* 430 b 28. In the foregoing the definition of a *thing* is made prominent. But science has to investigate and define attributes and properties as well as things. Thus we may enquire τί ἐστι λευκόν; τί ἐστι τρίπηχυ; τί ἐστι κίνησις; and so through all the categories. Hence τὸ τί ἐστι as a noun may denote any of the categories, *Metaph.* 1030 a 18—20. It belongs ἁπλῶς to οὐσία, and in a derivative sense to the rest, just as εἶναι itself does: *ib.* a 20 ὥσπερ γὰρ καὶ τὸ ἔστιν ὑπάρχει πᾶσιν ἀλλ' οὐχ ὁμοίως, ἀλλὰ τῷ μὲν πρώτως τοῖς δ' ἑπομένως, οὕτω καὶ τὸ τί ἐστιν ἁπλῶς μὲν τῇ οὐσίᾳ πῶς δὲ τοῖς ἄλλοις. And the same applies to τὸ τί ἦν εἶναι: *ib.* 1030 b 4—7. Lastly, there is a further case, of which λευκὸς ἄνθρωπος is a type. This, too, has its τί ἐστι and can be defined, though again in a different sense from either ἄνθρωπος or λευκόν: *ib.* 1030 b 12 sq.

a 13. μία τις εἶναι μέθοδος κατὰ πάντων. A single method, it might be thought, applies to all the objects which we seek to define scientifically. The natural expectation that there is some such universal method of finding a definition which all the sciences may adopt proves to be without foundation (see *Anal. Post.* II. cc. 3—7. Cf. *ib.* II. c. 13). The ordinary procedure of the sciences as they existed in A.'s time was to assume the definition or to collect it by induction on the evidence of the senses, *Metaph.* 1025 b 8 πᾶσαι αὗται [sc. αἱ ἐπιστῆμαι] περὶ ὄν τι καὶ γένος τι περιγραψάμεναι περὶ τούτου πραγματεύονται,...οὐδὲ τοῦ τί ἐστιν οὐδένα λόγον ποιοῦνται, ἀλλ' ἐκ τούτου [sc. τοῦ γένους] αἱ μὲν αἰσθήσει ποιήσασαι αὐτὸ δῆλον, αἱ δ' ὑπόθεσιν λαβοῦσαι τὸ τί ἐστιν, οὕτω τὰ καθ' αὑτὰ ὑπάρχοντα τῷ γένει περὶ ὅ εἰσιν ἀποδεικνύουσιν ἢ ἀναγκαιότερον ἢ μαλακώτερον. διόπερ φανερὸν ὅτι οὐκ ἔστιν ἀπόδειξις οὐσίας οὐδὲ τοῦ τί ἐστιν ἐκ τῆς τοιαύτης ἐπαγωγῆς, ἀλλά τις ἄλλος τρόπος τῆς δηλώσεως· ὁμοίως δ' οὐδ' εἰ ἔστιν ἢ μὴ ἔστι τὸ γένος περὶ ὃ πραγματεύονται οὐδὲν λέγουσι, διὰ τὸ τῆς αὐτῆς εἶναι διανοίας τό τε τί ἐστι δῆλον ποιεῖν καὶ εἰ ἔστιν. In mapping out a new province of knowledge, and in projecting the organisation of a new department of enquiry, the defect here mentioned, the want of a short and easy road to definitions, would naturally be felt. κατὰ c. gen. is used after εἶναι and ὑπάρχειν, and even after κοινόν, in much the same sense as after verbs of predication, λέγεσθαι, κατηγορεῖσθαι, the technical expressions καθόλου and κατὰ παντὸς (*Anal. Post.* I. 4, 73 a 28 sqq.) being evidence how wide this usage is: Eucken, *Uber die Praepositionen*, p. 40, observes that ἐπί c. gen. et dat., περί c. gen. et acc. are almost equivalent.

a 15. ὥσπερ...ἀπόδειξις. The nature and functions of demonstration or demonstrative proof are the subject of *Anal. Post.* I., where they are fully treated. Very briefly, A.'s position is that, since all extension of knowledge depends upon previous knowledge, demonstration implies undemonstrated

premisses or principles, from which by syllogistic reasoning conclusions true and necessary are obtained in a particular province. Geometry is the typical demonstrative science, and Euclid's elements illustrate its application to the extension of knowledge. Cf. *Anal. Post.* I. 7, 75 a 39 *τρία γάρ ἐστι τὰ ἐν ταῖς ἀποδείξεσιν, ἓν μὲν τὸ ἀποδεικνύμενον τὸ συμπέρασμα· τοῦτο δ' ἐστὶ τὸ ὑπάρχον γένει τινὶ καθ' αὑτό* [the *κατὰ συμβ. ἴδιον* of our present lemma. Cf. Them. 2, 14 sq. H., 3, 11 Sp., Philop. 31, 22 sq., Simpl. 9, 33 sq.], *ἓν δὲ τὰ ἀξιώματα· ἀξιώματα δ' ἐστὶν ἐξ ὧν. τρίτον τὸ γένος τὸ ὑποκείμενον, οὗ τὰ πάθη καὶ τὰ καθ' αὑτὰ συμβεβηκότα δηλοῖ ἡ ἀπόδειξις.* Occasionally A. twits those whom he is criticising with *ἀπαιδευσία* on the ground that they have not mastered the true nature of demonstration with its three indispensable elements, the *γένος* or *περὶ ὅ*, the premisses *ἐξ ὧν* and the conclusion, so that they irrationally demand a proof of everything, e.g. *Metaph.* 1006 a 5—11, 1005 b 2—4. As to the conjunction of *ἴδια* and *κατὰ συμβεβηκός*, the latter must be taken in the sense explained above (on a 8) *ὅσα συμβέβηκε*; otherwise they could not be demonstrated: *Anal. Post.* I. 6, 75 a 18 *τῶν συμβεβηκότων μὴ καθ' αὑτὰ...οὐκ ἔστιν ἐπιστήμη ἀποδεικτική*, *ib.* I. 30, 87 b 19 sqq. The passage in *Top.* V. 1, 128 b 16 sqq. (cf. *ib.* 3, 131 a 27, b 1—6), where *ἴδιον* is divided into (1) *καθ' αὑτὸ καὶ ἀεί*, and (2) *πρὸς ἕτερον καὶ ποτέ*, belongs to dialectic not science, and the examples given of (2) lie outside theoretical science in which all the attributes demonstrated must be *ἀΐδια καὶ ἀναγκαῖα*. Cf. *Metaph.* 1025 a 30 *λέγεται δὲ καὶ ἄλλως συμβεβηκός, οἷον ὅσα ὑπάρχει ἑκάστῳ καθ' αὑτὸ μὴ ἐν τῇ οὐσίᾳ ὄντα....καὶ ταῦτα μὲν ἐνδέχεται ἀΐδια εἶναι, ἐκείνων δ'* [accidents proper, *τῶν μὴ καθ' αὑτά*] *οὐδέν*. As a technical term of logic *ἴδιον* is defined, *Top.* I. 5. 102 a 18 *ὃ μὴ δηλοῖ μὲν τὸ τί ἦν εἶναι, μόνῳ δ' ὑπάρχει καὶ ἀντικατηγορεῖται τοῦ πράγματος* (i.e. eius notionis, cui tamquam *ἴδιον* tribuitur; *Ind. Ar.* 339 b 18). Contrast *Top.* I. 5, 102 b 4—26. Cf. *Metaph.* 1025 b 7—13: each separate science having marked off its province, *γένος*, and somehow empirically obtained or provisionally assumed a definition of it, proceeds to deduce the essential attributes of that *γένος*, *τὰ καθ' αὑτὰ ὑπάρχοντα τῷ γένει*, here called *ἴδια*.

a 18 δεήσει γάρ...19 τίς ὁ τρόπος. If we assume that there are various methods of arriving at a definition, the difficulty is increased, because in investigating any single department (*περὶ ἑκάστου τῶν ὄντων*) we must first ascertain which of these various methods is appropriate to that department (*τίς τρόπος οἰκεῖος*: Them. 2, 18 H., 3, 16 Sp.): cf. Philop. 32, 2 *ποίᾳ μεθόδῳ ἐπὶ ποίων πραγμάτων χρηστέον.*

a 19. ἐὰν δὲ φανερὸν ᾖ. Philop. 32, 5 *τοῦτο ὡς ἐν ὑποθέσει λέγει.* This suggestion seems reasonable. A. himself would not seriously identify the method of obtaining definitions with *ἀπόδειξίς τις* or *διαίρεσις*. See next notes. What he now urges is that the application as well as the choice of the method is attended with difficulty. Simpl. 10, 4 sqq. thinks the whole sentence an explanation (*ἐξήγησις*) of the words (a 18 sq.) *δεήσει γὰρ λαβεῖν περὶ ἕκαστον τίς ὁ τρόπος.* The problem of determining which method is applicable to a special case is the problem of discovering from what principles we must start in framing the appropriate definition. Simpl. 10, 7 *ἕπεται γὰρ καὶ τούτοις ζητεῖν, ἐκ τίνων ἀρχῶν ὁ ἴδιος ἑκάστου ἀποδοθήσεται ὁρισμός.*

a 19. πότερον ἀπόδειξίς τίς ἐστιν. *Τίς* quod in quibusdam libris omittitur, id casu factum est. Nam quoniam (a 15) posuimus demonstrationem esse *τῶν κατὰ συμβεβηκὸς ἰδίων*, si demonstratio etiam est *τῆς οὐσίας καὶ τοῦ τί ἐστιν*, erit sane alia species demonstrationis, *ἀπόδειξίς τις*. *Metaph.* 1059 a 30 *εἰ γὰρ περί γε τὰ συμβεβηκότα ἀπόδειξίς ἐστιν, περὶ τὰς οὐσίας οὐκ ἔστιν.* 997 a 2 sqq. e quibus haec opponimus, (a 25) *ἔτι δὲ πότερον περὶ τὰς οὐσίας ἡ θεωρία μόνον ἐστὶν ἢ καὶ*

περὶ τὰ συμβεβηκότα ταύταις...εἰ μὲν γὰρ τῆς αὐτῆς, ἀποδεικτική τις ἂν εἴη καὶ ἡ τῆς οὐσίας· οὐ δοκεῖ δὲ τοῦ τί ἐστιν ἀπόδειξις εἶναι (Torst. p. 113). Cf. *Metaph.* 1025 b 14 διόπερ φανερὸν ὅτι οὐκ ἔστιν ἀπόδειξις οὐσίας οὐδὲ τοῦ τί ἐστιν ἐκ τῆς τοιαύτης ἐπαγωγῆς, ἀλλά τις ἄλλος τρόπος τῆς δηλώσεως. Stapfer, *Krit. Stud.*, p. 28, urges that the alternatives would be more sharply defined if, with E, we omit τις, contrasting the use of the pronoun, "richtig gesetzte τις," 402 a 13, 20. But, in view of Torstrik's citations, even the hypothetical mention of ἀπόδειξις in this connexion needs some qualification, and τις = "of a sort" is half ironical, half apologetic. The relation of demonstration to definition is fully discussed in *Anal. Post.* II. cc. 1—11. The two processes are wholly dissimilar. It is impossible to demonstrate essence or to obtain a definition by demonstration alone. All such attempts involve a *petitio principii*. Cf. *Anal. Post.* II. 3, especially 90 b 18—91 a 8, *ib.* II. 7, 92 b 35—39, *ib.* II. 8, 93 b 15—20. But where to know what a thing really is is the same as to know why it is (*Anal. Post.* II. 2, 90 a 15, 31), and the question, "What is the real nature of a thing?" can be interpreted to mean, "What is the cause which makes the thing what it is?," then the search for definitions becomes virtually a search for causes in which demonstration and the syllogism play an important part: *Anal. Post.* II. 8, 93 a 1—15 (the passage ends with the words: οὗτος μὲν οὖν ὁ τρόπος—this method of defining—ὅτι οὐκ ἂν εἴη ἀπόδειξις εἴρηται πρότερον. ἀλλ' ἔστι λογικὸς συλλογισμὸς τοῦ τί ἐστιν), *ib.* II. 10, 93 b 38—94 a 10. This subsidiary use of demonstration is illustrated 413 a 16—20. Similarly at the end of III. 3 A. claims to have ascertained at once the essence and the cause of imagination; having explained the process from its causes, 428 b 10 sqq., he has been able to define it: 429 a 8 περὶ μὲν οὖν φαντασίας, τί ἐστι καὶ διὰ τί ἐστιν, εἰρήσθω ἐπὶ τοσοῦτον. No logical instrument demonstrates that a combination of certain elements makes up the essence to be defined, *Anal. Post.* II. 5, 91 b 24 sqq., *Metaph.* 1037 b 10 sqq.: all we show is that (ὅτι), or why (διότι) an attribute can be predicated of a subject. In other words, given a knowledge of the facts (τὸ ὅτι) and the cause (τὸ διότι), the definition can be discovered and recognised as such, and the practical rules laid down employ demonstration, especially demonstration *a posteriori* of the cause from the effect, and demonstration that the elements of the definition are essential attributes of the definiend.

a 20. ἡ διαίρεσις. Analysis of a genus into its species, of these into their sub-species, and so on until we come to the lowest or ultimate species containing only individuals. This process of obtaining a definition is employed by Plato, e.g. in *Sophist* and *Politicus*. A. criticises the process (*Anal. Prior.* I. 31, 46 a 32 sq., *Anal. Post.* II. 5, 91 b 14 sqq.), pointing out that it always involves a *petitio principii*. But in his own practical rules A. employs division as a subsidiary process, *ib.* II. 13, 96 b 25 sqq. **ἢ καί τις ἄλλη μέθοδος.** If these suppositions are not seriously meant, it is unimportant what the reference is. In *Anal. Post.* II. 6 A. rejects the claims of hypothetical proof of definition and proof by definition of the opposite. When all false claims are disallowed we fall back presumably upon sense-perception and induction: see *note* on a 13. A.'s own method as elaborated in *Anal. Post.* is designated by Them. (2, 20 H., 3, 19 Sp.) σύνθεσις μᾶλλον. Zabarella calls it *via compositiva*.

a 21. πλάνας. Cf. *Eth. Nic.* 1094 b 15 τοσαύτην ἔχει διαφορὰν καὶ πλάνην. A favourite Platonic term for mental perplexity and error, e.g. *Rep.* 444 B, *ib.* 505 C, *Phaedo* 81 A, *Parm.* 135 E τὴν πλάνην ἐπισκοπεῖν. **ἐκ τίνων δεῖ ζητεῖν.** The search for a definition may start from a higher genus: Philop. 32, 12 τουτέστιν ὑπὸ ποῖον γένος ἀνάξομεν τὸ προκείμενον πρᾶγμα, ἐπειδὴ οὐχ ἓν γένος τῶν ὄντων ἀλλὰ δέκα......22 ζητοῦμεν οὖν, φησίν, ὑπὸ ποῖον γένος ἀνάγεται τὸ

προκείμενον (πολλῶν γὰρ τὸ γένος ἀμφισβητήσιμον), ἵνα εὑρόντες τοῦτο καὶ διελόντες εἰς τὰς οἰκείας διαφορὰς οὕτω τοὺς ὁρισμοὺς ἀποδῶμεν. Or, again, it may start from particulars and proceed by induction, though this procedure will require subsidiary processes; see the rules laid down in *Anal. Post.* II. 3 and *Top.* VI. I. The procedure in *De A.* II., c. I resembles in the main the former, though with peculiarities of its own.

ἄλλαι γὰρ ἄλλων ἀρχαί. The definitions of the unit and of number as the sum of units (τὸ ἐκ μονάδων συγκείμενον πλῆθος) belong to discrete quantity (διωρισμένον ποσόν), whereas those of surface and of line belong to continuous quantity (τὸ συνεχές). Such definitions form the starting-points or principles of the respective sciences. To the conclusions of the science they are related as cause to effect (διὰ τί): *Phys.* II. 7, 198 a 16—18 ἢ γὰρ εἰς τὸ τί ἐστιν ἀνάγεται τὸ διὰ τί ἔσχατον ἐν τοῖς ἀκινήτοις, οἷον ἐν τοῖς μαθήμασιν (εἰς ὁρισμὸν γὰρ τοῦ εὐθέος ἢ συμμέτρου ἢ ἄλλου τινὸς ἀνάγεται ἔσχατον) ἢ εἰς τὸ κινῆσαν πρῶτον, οἷον διὰ τί ἐπολέμησαν. See also *note* on 402 b 18 **ὥσπερ ἐν τοῖς μαθήμασι.**

402 a 23—b 8. The problems which more particularly concern the definition of soul and the investigation of its essential properties are: (1) To what category does the soul belong? (2) Is it potentially or actually existent? [§ 3] (3) Is it divisible or indivisible? (4) Is it throughout homogeneous? If not, does the difference between soul and soul amount to a difference of genus or only of species? In contemporary discussion the soul of man stands for soul in general [§ 4]. (5) Does soul, like animal, admit of a single definition, or must we rest content with definitions of the several species of soul? [§ 5].

a 23. πρῶτον δ' ἴσως. If we mean to proceed with the task of defining the soul, there are certain problems to be solved which A. now states explicitly, though, contrary to his usual custom, he omits the arguments for and against, except in the case of the last, 403 a 3, and even then the discussion is of the briefest. *Ind. Ar.* 347 b 32 saepe ἴσως non dubitantis est, sed cum modestia quadam asseverantis. Cf., e.g., 405 b 31. **διελεῖν,** "distinguish" or rather "determine." *Ind. Ar.* 180 a 22 ex distinguendi significatione [cf. *ib.* 179 b 54 distinguere genus aliquod in species] διαιρεῖν abit in notionem disputandi, explorandi, explicandi. Cf. *Pol.* 1339 a 14 οὔτε γὰρ τίνα ἔχει δύναμιν ῥᾴδιον περὶ αὐτῆς διελεῖν, *ib.* 1299 a 12, 1300 b 18, 1341 b 31. On *Pol.* 1321 b 4 Newman remarks, "Διαιρεῖν seems here to be used in the sense of διορίζειν, as in 1289 b 12 and elsewhere." **τῶν γενῶν**=(a 25 and 410 a 15) τῶν διαιρεθεισῶν κατηγοριῶν, the table of the ten categories being at once a classification of predications or attributes predicated of a subject and the *summa genera* of all that exists (γένη τοῦ ὄντος). Ultimately these ten *summa genera* may be reduced to two, viz. substance on the one hand, and its appendages quality, quantity, relation, etc. on the other. See *Metaph.* 1028 a 10—b 7, 1045 b 27—32, 1069 a 18—24. **καὶ τί ἐστι.** καὶ explicative, as also in the following line τόδε τι καὶ οὐσία: Simpl. 10, 27 προστέθεικε **καὶ τί ἐστι** σαφηνίζων τί δηλοῖ τὸ ἐν γένει εἶναι, ὅτι καθ' ὅ τί ἐστιν (i.e. in what respect it is something), ὥσπερ ἐν διαφοραῖς καθ' ὃ τοιόνδε: Philop. 33, 16 ἐκ **διαιρέσεως** δεῖ λαβεῖν αὐτῆς τὸ γένος, ὅπερ γένος ἐν τῷ τί ἐστι κατηγορεῖται. Philoponus, anticipating II., c. I, means that soul will ultimately be found under the category of substance, τὸ τί ἐστι=τόδε τι καὶ οὐσία.

a 24 λέγω δὲ...25 κατηγοριῶν. Simpl. 10, 28 ἀμφισβητεῖται δὲ ἐπὶ ψυχῆς, εἰ τὸ γένος **αὐτῆς οὐσία ἢ ποιὸν ἢ ποσόν.** Simplicius thinks that substance, quality and quantity are explicitly mentioned because they found support in the views current at the time: e.g. the Pythagoreans and Plato made soul a substance, the theory of harmony (I. 4) made it a quality and Xenocrates a quantity. But the enumeration of Categories takes precisely the same form

in 410 a 14 sq., where there is certainly no such allusion. It is indeed quite a common form of citing the categories, being found in eight other passages, while in six more these three most important categories are specified without the addition of "et cetera." See Apelt, *Beiträge zur griech. Philosophie*, p. 140 sq.

a 25 ἔτι δὲ...26 ἐντελέχειά τις. To explain this second problem we must bear in mind that of the four significations of the ambiguous term Being or *ὄν* the last is possible and actual being (*Metaph.* 1017 b 1). This distinction concerns merely the modality of Being in whatever category it is found, and A.'s examples are in fact drawn from various categories. He gives *ὁρῶν, ἐπίστασθαι, ἠρεμοῦν* 1017 b 2 sqq., *τὸ θερμὸν* 1046 a 26, *οἰκοδομεῖν* 1046 b 30 sqq., *βαδίζον* 1047 a 23. Simpl. 11, 3—6 equates *ἐντελέχεια* with *εἶδος*, and supposes *ἐν δυνάμει ὄν* to include not only *ὕλη* but also *τὸ σύνθετον ἐξ ὕλης καὶ εἴδους*. A. had the category of substance chiefly in view, but his statements ought to admit of extension to the other categories. Cf. Them. (2, 38 H., 4, 16 Sp.) *δεύτερον ἡνίκα ἂν τὸ γένος διακριθῇ, ἐπειδὴ διχῶς ἕκαστον λέγεται γένος...εἴπερ οὖν τὴν οὐσίαν εὕροιμεν τῆς ψυχῆς, ἐν τίνι τῶν διαφορῶν τούτων ἀποτμηθήσεται, ἆρ' ὡς δύναμις ὑποκειμένη καὶ πρὸς οὐσίαν ἔχουσα εὐφυῶς, ἢ μᾶλλον ὡς ἐντελέχεια;* the addition of *τις* points to the probability that further qualification is necessary: Simpl. 11, 15 *ὅτι μὴ ἀπροσδιορίστως καὶ ἁπλῶς ἐστιν ἐντελέχεια ἀλλ' ὑποβεβηκότως*, though I should not go so far as Them. (3, 4—6 H., 4, 26—28 Sp.), who sees a distinct anticipation of 412 a 10 sq., 22—28.

402 b 1. μεριστὴ ἢ ἀμερής. This question, to which A. returns 411 b 5—30, 413 b 11—414 a 1, 432 a 22—b 7, does not admit of an unqualified answer. It depends upon the meaning we assign to the term part and its correlative whole (cf. *Metaph.* Δ. 25 sq.). Speaking generally, *μέρη = εἰς ἃ διαιρεῖται καὶ ἐξ ὧν σύγκειται τὸ ὅλον*, but A. is careful to add (1023 b 20) *ἢ τὸ εἶδος ἢ τὸ ἔχον τὸ εἶδος*. Any quantity (*ποσόν*) has quantitative parts: in this sense part is not applicable to the soul, if it is neither *μέγεθος* (407 a 2 sq.) nor *ποσὸν* at all (410 a 21). Cf. Alex., *De A.* 30, 29 *ἡ δὲ ψυχὴ οὐ μόνον οὐχ ὡς μέγεθος, ἀλλ' οὐδ' ὡς ἀριθμός ἐστι μεριστή*. But non-quantitative wholes may be broken up by logical analysis, genera into species, species into sub-species: cf. 430 b 14, Them. (3, 7 H., 5, 1 Sp.) *καὶ εἴπερ φανείη μεριστή, πότερον ὡς σῶμα καὶ ὄγκος, ἢ ὡς τέχνη καὶ ἐπιστήμη*. Further, the definition has parts (*τὰ ἐν τῷ λόγῳ δηλοῦντι ἕκαστον*) more general than itself, *Metaph.* 1023 b 24, cf. 1034 b 20 sqq. Hence, when A. returns to this question 413 b 13 sqq., 429 a 11, he contrasts the logical distinctness of the parts, their separateness to thought (*λόγῳ ἕτερα, χωριστά*) with spatial distinctness, the separateness of extended objects (*κατὰ τόπον, κατὰ μέγεθος χωριστά*).

b 1. πότερον ὁμοειδής. Them. (3, 16 H., 5, 13 Sp.) *τέταρτον ἂν εἴη ζήτημα τῶν εἰρημένων, ἆρα ὁμοειδὴς πᾶσα ψυχὴ πρὸς πᾶσάν ἐστιν, ἢ οὐδαμῶς, καὶ εἴπερ ὑφ' ἕτερον καὶ ἕτερον εἶδος, ἆρ' οὐδ' ὑφ' ἓν γένος; οἷον ἡ ἀνθρώπου καὶ ἵππου· εἰ δὲ μὴ ταὐτὸν ἔχουσιν εἶδος ψυχῆς, ἆρ' οὐδὲ γένος ταὐτόν; ἀλλ' ὁ μὲν ἄνθρωπος καὶ ἵππος ὑπὸ τὸ ζῷον, αἱ ψυχαὶ δὲ αὐτῶν οὐκέτι καὶ ὑφ' ἓν γένος ψυχῆς; ταῦτα δὲ οὐχ οἷόν τε διακρῖναι τὰ προβλήματα μὴ περὶ πάσης ψυχῆς ἐπισκοπουμένους, ὅπερ ἔνιοι τῶν πρότερον παρεώρων*. The term *ὁμοειδής* is applied to air (411 a 21: cf. a 17, 18) and to the other elements, e.g. water, *Metaph.* 1014 a 30 sq., fire, *De Caelo* I. 8, 276 b 5 sq.: again, to the plurality of mathematical objects, *Metaph.* 1002 b 14—21 (with *πόλλ' ἄττα ὁμοειδῆ* cf. 987 b 17 *πόλλ' ἄττα ὅμοια*). The great examples are arithmetical units, which are *ἀδιάφοροι*, 409 a 1 sq.: cf. 409 a 18—20.

b 2. ἅπασα. Atticorum more, sicut *πᾶσα*, unaquaeque; cf. Heind. ad Pl. *Phaed.* p. 108 B. Neque enim quaeritur, ut ex sequentibus patet, an animus

totus similes in se partes habeat sed potius an animae eandem inter se speciem referant (Trend.). Heindorf's note is as follows: "ἅπας φεύγει. Sic, de quo vir doctus dubitabat, ἅπας, *unusquisque*, pro πᾶς positum et *Politic.* 259 C βασιλεὺς ἅπας. *De Legg.* I. 628 B ὃν μάλιστα μὲν ἅπας ἂν βούλοιτο μηδὲ γενέσθαι ποτέ, etc. Eurip. *Bacch.* 70 στόμα τ' εὔφημον ἅπας ὁσιούσθω." Cf. Them. (3, 16 H., 5, 14 Sp.) πᾶσα πρὸς πᾶσαν... (cited above); Simpl. 12, 2 ἀλλήλαις αἱ ψυχαὶ πᾶσαι. Philop. 36, 9 αὗται οὖν, φησίν, αἱ ἐν πᾶσιν ἁπλῶς τοῖς ἐμψύχοις ψυχαί. But in πᾶσα ψυχὴ ἀθάνατος the word is hardly distributive, rather "all soul" or "soul in all its forms." This meaning need not be excluded here. Cf. 411 a 18 sq.

b 2. **πότερον εἴδει διαφέρουσιν ἢ γένει.** On the terms ἕτερον τῷ εἴδει, ἕτερον τῷ γένει see *Metaph.* 1057 b 35—1059 a 14. If we assume a plurality of souls more or less unlike corresponding to the plurality of animals (cf. b 9 πολλαὶ ψυχαί), and if we further assume that they belong to a variety of species, is this the limit of the difference between them, or are they so unlike that they are incapable of being brought under the same genus? Any two things ἕτερα τῷ εἴδει must belong to the same genus, *Metaph.* 1057 b 37 τὸ γὰρ τοιοῦτον γένος καλῶ, ὃ ἄμφω ἓν ταὐτὸ λέγεται μὴ κατὰ συμβεβηκὸς ἔχον διαφοράν, εἴθ' ὡς ὕλη ὂν εἴτ' ἄλλως. Thus, if these conditions are fulfilled, there would be a genus soul. If however the soul in some cases is immortal, in others mortal, these souls could hardly belong to the same genus, cf. 413 b 26.

b 3. **νῦν.** Cf. *Eth. Nic.* 1144 b 21, *Pol.* 1268 a 11 and *note* on 408 b 20.

b 4. **περὶ τῆς ἀνθρωπίνης**, int. ψυχῆς. It is implied that they neglected the phenomena of life in all its other forms, including plants. Obviously the solution of the present problem presupposes a comparative study of all species of animals and (cf. 411 b 27 sq.) plants. For A.'s own procedure the precept given 414 b 32 is ὥστε καθ' ἕκαστον ζητητέον, τίς ἑκάστου ψυχή, οἷον τίς φυτοῦ καὶ τίς ἀνθρώπου ἢ θηρίου. Alex. Aphr. apud Philop. 36, 13 and Simpl. 12, 31 sqq. think the criticism is aimed at Plato, especially in the *Timaeus*, where, however, the soul even of the plant is distinctly recognised (77 A, B), and everything which partakes of life is declared to be a ζῷον and to have some sort of soul. Philop. 36, 16 sqq. takes the reference to be general, including Democritus and the other physicists.

b 5 **πότερον εἰς...8 ἢ ὕστερον.** Knowledge is of the universal, definition of the universal, i.e. the form (*Metaph.* 1036 a 28 sq.). Particular souls and particular animals differ, but all animals belong to the genus animal, though they also belong to different species, horse, man, dog. Is, then, the genus animal the type of universality by which soul is known and defined, or shall we seek distinct definitions of the species? The settlement of this question will have a direct bearing on procedure. If we take the first alternative, a study of the genus, in which are united all the common characteristics of soul, will precede the study of the different varieties. If we favour the second alternative, the study of the varieties should come first, for the genus is a logical entity and not the constitutive form of any of the particulars of which it is predicated. It is part of that form and part only. There is another view of the passage. Some take it that the preceding question is presumed to be decided in the sense that the difference between souls is a specific and not a generic difference, so that it only remains to consider what is the nature of the genus to which they all belong. It may be (1) such that they are, in technical language, συνώνυμα (ὧν τό τε ὄνομα κοινὸν καὶ ὁ λόγος ὁ αὐτός, *Cat.* I. 1 a 6). If not, they are either (2) ὁμώνυμα, having nothing in common but the name, or (3) πρὸς ἓν λεγόμενα, forming a γένος κατ' ἀναλογίαν, of which ἓν and ὂν are examples. It is assumed that animal cannot illustrate both alternatives: it cannot, as genus, be

the object of a single definition and at the same time be the non-existent or posterior universal of particulars which admit of several definitions. Hence it is inferred that in the second alternative animal replaces soul and that what is said of it is only true of animal in a supposed and not an actual case: in other words, that soul, unlike animal, is not a genus, because souls form a series, and such a class is destitute of true generality. Alex. Aphr. first gave this explanation, though he afterwards modified or retracted it. He tells us (*ἀπ. καὶ λύσ.*, pp. 22, 23 sqq.) that in his lost commentary on *De A.* he had shown that A. may possibly have used *ζῷον* as an example to illustrate the different species of soul regarded as related in a definite order of succession (22, 24 sq.). If so, Alex. considered, the example chosen would be fictitious. If man, horse, dog were not *ὁμογενῆ*, were not, as they are, species of the one genus *ζῷον*, each of them would require to be separately defined, and either the common term "animal" as applied to all of them would denote no characteristic nature (*οἰκεία φύσις*), but would be employed in an ambiguous or equivocal sense, or, if there were anything objective corresponding to it, it would be like a term of various meanings, of which one is always prior to the other, *τὰ πολλαχῶς λεγόμενα ἐν οἷς ἐστὶ τὸ πρότερον καὶ ὕστερον*, or classes arranged in series having a definite order of succession. [Examples are found in the numerical series 2, 3, 4, etc., in rectilinear figures (*Metaph.* 999 a 6 sqq.) and in constitutions (*Pol.* 1275 a 34 sqq.): probably also in such notions as *ὑγιεινὸν* and *ἀγαθόν*. The common characteristic is present in varying degrees in different members of such a class, being hardly discernible in some: *Pol.* 1275 a 37 *ἢ τὸ παράπαν οὐδ' ἔνεστιν, ἢ τοιαῦτα, τὸ κοινόν, ἢ γλίσχρως.*] Alex. continues (23, 13) *τὸ δ' ἐν οἷς τὸ πρότερον καὶ ὕστερόν ἐστιν, ἀναιρουμένῳ τῷ πρώτῳ ἔχοντι τὸ ὑπ' αὐτοῦ σημαινόμενον συναναιρεῖται, διὸ οὐκέτι πρῶτον ἀλλ' ὕστερον γίνεται. τοιοῦτον δὲ δείξει καὶ τὴν ψυχὴν ὄν.* This, the earlier explanation of Alex., is accepted amongst others by Zabarella, who argues that in Book II. A. declares soul to be *commune quid analogum*, and therefore its generic definition is insufficient: we need the specific definitions of the several parts of soul in order to complete our knowledge. According to him, animal is *genus univocum*, soul is *genus analogum* with nothing objective answering to it except the name and the individual souls. Hence the definition of animal gives some information, though incomplete; the generic definition of soul gives no knowledge, unless accompanied by the knowledge of the several parts of soul. The obvious defect in this explanation is the choice of a fictitious example. To remedy this defect Alex. proposes to show (*ἀπ. καὶ λύσ.*, 21, 19; 23, 21) that after all A.'s words *ἢ οὐδέν ἐστιν ἢ ὕστερον* are true of animal and of genera properly so called, provided that we carefully distinguish between *ζῷον = οὐσία ἔμψυχος αἰσθητική*, which is something existent, a thing with attributes (*ὄν τι πρᾶγμα*), and *τὸ ὡς γένος ζῷον*, animal as genus or universal, which is properly nothing but merely an attribute of things (*τινῶν ὄν, συμβεβηκὸς πράγματι, σύμπτωμα ἐπί τινι γινόμενον πράγματι*). Strictly the genus is not *ὄν τι*, but, if by courtesy we include it among *ὄντα*, it is decidedly posterior logically to the individual members which belong to it. This Alex. proves in the usual way. Suppose the genus animal annulled in thought, this would leave unaffected the existence of particular animals, whereas the destruction of the members of the genus necessarily implies that the genus ceases to exist. Here, it will be observed, he comes to a conclusion concerning the true genus diametrically opposite to that which he had previously reached in his commentary on the *De A.*, viz. (23, 11) *τὸ μὲν γὰρ ὡς γένος τινῶν κατηγορούμενον ἀναιρούμενον συναναιρεῖ αὐτῷ πάντα τὰ ὑφ' αὐτό, ὧν οὐδενὶ ἀναιρουμένων συναναιρεῖται, διὸ πρῶτον τῇ φύσει.* It may perplex some to find the problem

first stated for soul, animal being adduced as an illustration, while afterwards A. goes on to speak of animal, the illustration, leaving soul out of sight. But to lose the immediate subject in the illustration is quite in A.'s manner. Cf. 403 a 12 sqq., 431 a 17 sqq. Further, there is good reason why he should begin with soul and continue with animal; for the latter term is in his view equally applicable to both; at any rate he allows such a view to be tenable. Cf. *Metaph.* 1043 a 34 καὶ ζῷον πότερον ψυχὴ ἐν σώματι ἢ ψυχή...εἴη δ' ἂν καὶ ἐπ' ἀμφοτέροις τὸ ζῷον, οὐχ ὡς ἑνὶ λόγῳ λεγόμενον ἀλλ' ὡς πρὸς ἕν. The possibility of such a double application is impartially admitted *Metaph.* 1036 a 16—19, 24 sq., 1037 a 5—10. When we speak of defining, it is always with the tacit assumption that the particular, as such, the compound of form and matter which is perishable and subject to change, is incapable, properly speaking, of being defined: *Metaph.* 1039 b 20—1040 a 7. If animal denoted an infima species instead of a genus, the identity of animal and soul for the purpose of definition would be complete; but this is not the case. Animal, as universal, like man as universal, denotes a class which, like its individual members, is a σύνολον or compound of form and matter, form capable, matter incapable, of definition: *Metaph.* 1035 b 27—30, 1037 a 5—7. Such a class is not οὐσία (1035 b 28, 1038 b 8—16, 35), for it denotes not τόδε τι but τοιόνδε (1039 a 1 sq., 16). This is what A. means by ἢ οὐδέν ἐστιν = οὐκ ἔστιν οὐσία τοῦ ζῴου τοῦ καθόλου. As a mere universal notion or class-name, animal denotes the common characteristic or characteristics by which species are combined in a genus; and similarly man, as mere universal, denotes the common characteristic or characteristics by which particular men are combined in an infima species. In other words, animal is neither ἓν παρὰ τὰ πολλὰ nor ἓν ἐπὶ πολλῶν, but simply ἓν κατὰ πολλῶν or κοινῇ κατηγορούμενον (402 b 8). Nevertheless, it is ὄν τι, a logical entity, owing its existence to thought: cf. Philop. 38, 3 ἔχει γὰρ τὴν ὑπόστασιν ἐν τῷ νοεῖσθαι, ὡς μέντοι καθ' αὑτὸ ὑφεστηκὸς οὐδέν ἐστι. As thus described, it is ὕστερον, posterior to every member of the class, to every possessor of the characteristic or characteristics which it predicates as held in common: for πάθη are necessarily posterior to οὐσία; otherwise they would exist independently, apart from οὐσία (*Metaph.* 1038 b 23—29).

But it may be urged that elsewhere καθόλου is described as κατὰ παντός, καθ' αὑτό, ᾗ αὐτό, *Anal. Post.* I. 4. 73 b 26 sq., whereby it is given a place ἐν τῷ τί ἐστιν, and that γένος is part of the definition and, as such, prior to the definition of which it is a part (*Metaph.* Z. c. 10, especially 1034 b 31 sq., 1035 b 14—20). We cannot define man, horse, dog, if we do not know animal, which forms part of the definition of each of these species. A. himself allows full weight to this objection: 1039 a 14—23. But, instead of modifying his view of the universal as μὴ οὐσία and therefore posterior, he is content with the remark that an objection which, if true without qualification, would make definition impossible, must somehow admit of qualification (1039 a 21 sq.). He held that, strictly speaking, infimae species were alone capable of definition, because to them alone belongs the form or quiddity (1030 a 11), which we define (λόγος τῆς οὐσίας) by collecting the essential, and excluding the accidental, characteristics shared by the members of the infima species. Thus we obtain a single definition for the entire species: *Metaph.* 998 b 12. This method of comparing individuals and obtaining a καθόλου or common predicate is an aid to defining and well adapted to the conditions under which human knowledge is acquired: but the community of predication has really nothing to do with οὐσία. If the species were reduced to a single member, the specific form would continue to be the quiddity of the sole survivor; whereas the genus, e.g. οὐσία ἔμψυχος

αἰσθητική or τὸ τριχῇ διάστατον, is but the matter of a definition and requires to be informed by a differentia before it can express the quiddity of any actual particular: *Metaph.* 1038 a 5 sqq., 1043 b 30—33, 1045 a 34 sq. It is because it is τὸ εἶδος τὸ ἐνόν, ὡς ἴδιον ὑπάρχον τῷ πράγματι, inhering in the particular and informing it, that form or quiddity is defined; and not because it is shared in common by a certain group of particulars. This may be seen if we either enlarge or contract the groups (1) by including horse and dog under the logical entity quadruped, man and fowl under biped, or (2) by setting up a similar logical entity in the artificial groups pointer, pony, albino. When we have reached ἄτομα τῷ εἴδει either from above or below, the end of classification has been attained.

I have assumed that animal, here called τὸ καθόλου, is a genus. We know from *Metaph.* 992 b 12 sq. that in some cases it is impossible for the universal to be a genus (e.g., the highest universals, ἓν and ὄν, are not genera in the same sense as biological classes: 998 b 22, cf. *Anal. Post.* II. 7, 92 b 13). Not that all the things called ὄντα are homonyms without any link of connexion save this common predicate: on the contrary, they are all so called from their relation to οὐσία, substance or Being proper, *Metaph.* 1003 b 5—15. There can, however, be no doubt that animal is a true genus and man, horse, dog true coordinate species or mutually exclusive classes. Yet animal is the example which A. takes when examining the claim of the universal to rank as οὐσία, *Metaph.* Z. c. 13, and his emphatic rejection of the claim, 1038 b 10—1039 a 2, has been referred to above.

In this chapter A. simply states his problems without solving them. This one is solved in 414 b 20 sqq., whence it appears that there is a single definition of soul, as of rectilinear figure, number and, we may add, of animal or any other genus (quadruped, biped, etc.), more general than the infima species. But in all these cases the definition obtained by comparison of individuals is imperfect and inadequate. It needs to be supplemented by the study of the species. I agree with Mr Innes that A. does not base his argument on τὸ ἐφεξῆς at all (*Cl. Rev.* XVI., p. 462): it would be just as valid if the different types of soul were mutually exclusive, like biological classes. In fact, A. studies them as if they were mutually exclusive: he treats, not of the soul of the plant, the jelly-fish, the non-stationary animal, the rational animal, but of θρεπτικόν, αἰσθητικόν, ὀρεκτικόν, νοητικόν.

b 5 πότερον εἷς ὁ λόγος...6 αὐτῆς ἐστί. If souls belong in all cases to the same genus, as all animals to the genus Animal, there will be a single definition of Soul the genus, as there is of the genus Animal. Them. (3, 23 H., 5, 23 Sp.) ἡμῖν δὲ τὴν καθόλου φύσιν ἐπισκεπτέον, ἆρα εἷς ὁρισμὸς καὶ ἓν τὸ τί ἦν εἶναι πάσης ψυχῆς, ἢ ἄλλος μὲν τῆς τοῦ ἀνθρώπου, ἄλλος δὲ τῆς τοῦ ἵππου; Philop. 36, 25 ἀποδοθείη δ' ἂν εἷς ὁρισμός, εἰ ἔχοιεν [int. αἱ ψυχαὶ] κοινὸν γένος, ὥσπερ τοῦ ζῴου γένους ὄντος ἵππου καὶ ἀνθρώπου καὶ τῶν λοιπῶν εἰδῶν εἷς ὁρισμὸς ἀποδίδοται, Simpl. 13, 3 εἰ μὲν γὰρ ὁμοειδεῖς πᾶσαι, εἷς ἔσται πάσης λόγος, ὥσπερ καὶ ἀνθρώπου καὶ ὡς αὐτὸς ἔφη ζῴου, εἰ δὲ ἀνομοειδεῖς, καθ' ἕκαστον εἶδος ἕτερος ἀποδοθήσεται λόγος. The unity of the definition depends on the unity of that which is defined: *Metaph.* 1045 a 12 ὁ δ' ὁρισμὸς λόγος ἐστὶν εἷς οὐ συνδέσμῳ καθάπερ ἡ Ἰλιάς, ἀλλὰ τῷ ἑνὸς εἶναι, cf. 1037 b 24—26. But this unity in the object, in the thing to be defined, must have a cause, 1037 a 19 sq. The *Iliad* is one by the stringing together of the parts, the definition because it signifies a natural whole, of which the parts are held together, not by the coherence of matter, or by coacervation, or by external force, but by an immanent form (ἐντελέχεια καὶ φύσις τὶς ἑκάστη, *Metaph.* 1044 a 9), distinctive and peculiar: *Poet.* 20. 1457 a

28—30, *Metaph.* 1052 a 16—25. This form or quiddity of an infima species is the object of definition, and strictly speaking, the only thing that can be defined: *Metaph.* 1037 b 25 *ὁ γὰρ ὁρισμὸς λόγος τίς ἐστιν εἷς καὶ οὐσίας, ὥσθ' ἑνός τινος δεῖ αὐτὸν εἶναι λόγον· καὶ γὰρ ἡ οὐσία ἕν τι καὶ τόδε τι σημαίνει, ὥς φαμέν,* 1030 a 11—13, 1038 a 19 *ἡ τελευταία διαφορὰ ἡ οὐσία τοῦ πράγματος ἔσται καὶ ὁ ὁρισμός.* The reader is referred to *Metaph.* Z. 12 and H. 6.

b 6. **καθ' ἑκάστην**, restored from the first hand of E by Torstrik who remarks: Quanquam enim notum est substantiva cuiuslibet generis si repetuntur per pronomina vel adiectiva pronominalia, haec posse neutro quod vocamus genere poni, id tamen hoc loco minus commode factum erat: nam *καθ' ἕκαστον* vult quidem illud referri ad animam, quum vero *ζῷον* interiectum esset, verendum erat ne ad *ζῷον* videretur referendum. Accuratius igitur et ab omni ambiguitate remotum *καθ' ἑκάστην.* Cf. 414 b 32, where the neuter involves no ambiguity, and 418 a 17, *note.* The question here raised aporetically recurs 414 b 20—33, where, as above remarked, it receives its solution.

b 7. **θεοῦ.** This should cause no surprise. *Top.* V. 4, 132 b 10 sq. *τὸ μὲν ζῷον ἐπιστήμης μετέχον ἀληθεύεται κατὰ τοῦ θεοῦ* (cf. 128 b 19 sq.), *Metaph.* 1023 b 32 *οἷον ἄνθρωπον, ἵππον, θεόν, ὅτι ἅπαντα ζῷα,* 1072 b 28 sq., 1088 a 10 *εἰ δ' ἄνθρωπος καὶ ἵππος καὶ θεός, ζῷον ἴσως*: Plato, *Phaedrus* 246 C, D. On *τὰ ἀίδια τῶν αἰσθητῶν* as gods, cf. 1074 b 2 sqq., 1026 a 18 sqq.

b 7. **τὸ δὲ ζῷον τὸ καθόλου.** The genus of which man, horse, etc. are species. Like all the rest of the series, this problem is proposed tentatively, as if A. himself had not taken sides in the controversy. His own views on the relation of genus to species are laid down in the *Metaphysics.* See for instance 1038 a 5. Two alternatives are possible, (1) that the genus simply does not exist apart from its species, (2) that it does exist, but *ὡς ὕλη*; 1038 b 34—1039 a 3, 1039 a 30—b 2 and Z. c. 14 generally; 1040 b 26 *δῆλον ὅτι οὐδὲν τῶν καθόλου ὑπάρχει παρὰ τὰ καθ' ἕκαστα χωρίς*; 1041 a 3—5. See also H. McL. Innes, *On the Universal and Particular in Aristotle's Theory of Knowledge.*

b 7. **ἤτοι οὐθέν ἐστιν ἢ ὕστερον.** So *Metaph.* 1042 a 21 *ἔστι τοίνυν οὔτε τὸ καθόλου οὐσία οὔτε τὸ γένος,* where A. is recapitulating the results obtained in Z, especially c. 13. Zabarella insists that *essentia*, not *existentia*, is intended. He adds "existentiam A. ut notam supponit." An instructive parallel is *Metaph.* 1038 a 5 *εἰ οὖν τὸ γένος ἁπλῶς μὴ ἔστι παρὰ τὰ ὡς γένους εἴδη, ἢ εἰ ἔστι μὲν ὡς ὕλη δ' ἐστίν* (*ἡ μὲν γὰρ φωνὴ γένος καὶ ὕλη, αἱ δὲ διαφοραὶ τὰ εἴδη καὶ τὰ στοιχεῖα ἐκ ταύτης ποιοῦσιν*). The coalescence of genus and last differentia in the definition is parallel to the union of matter and form in the particular. For *γένος ὡς ὕλη,* cf. 1024 b 8, 1043 b 10, 1058 a 23 sq.: perhaps also *De A.* 417 a 27.

b 8. **ὁμοίως δὲ κἂν...κατηγοροῖτο.** This appears to mean that whatever difficulty is raised by the genus animal or the genus soul attaches similarly to any common predicate or universal [*καθόλου* = *καθ' ὅλου κατηγορούμενον*], e.g. to body (cf. *Metaph.* 1069 a 25—30. I cite (a 26) *οἱ μὲν οὖν νῦν τὰ καθόλου οὐσίας μᾶλλον τιθέασιν· τὰ γὰρ γένη καθόλου, ἅ φασιν ἀρχὰς καὶ οὐσίας εἶναι μᾶλλον διὰ τὸ λογικῶς ζητεῖν· οἱ δὲ πάλαι τὰ καθ' ἕκαστον, οἷον πῦρ καὶ γῆν, ἀλλ' οὐ τὸ κοινὸν σῶμα*): or to geometrical figure, *σχῆμα.* In the parallel passage (414 b 22—28) what A. says is that "in the case of kinds of soul as in that of geometrical figures, the only general notion which will fit all is one which is not proper to any particular kind of soul or any particular figure, and that it is absurd to look for a general notion in these *as in other cases* without investigating the *infimae species*" (see Innes, *Class. Rev.* XVI. 462). Cf. *Metaph.* 1038 b 11 *τὸ δὲ καθόλου κοινόν. τοῦτο γὰρ λέγεται καθόλου, ὃ πλείοσιν ὑπάρχειν πέφυκεν. τίνος οὖν οὐσία τοῦτ' ἔσται, ἢ γὰρ ἁπάντων ἢ οὐδενός. ἁπάντων δ' οὐχ οἷόν τε κτέ.*

402 b 9—16. Further, if instead of a plurality of souls, we recognise a plurality of parts of a single soul, we have to decide whether our study should begin with the whole soul or with the parts, and how these parts are severally distinct; whether the study of the parts should be preceded by a study of their functions [§ 6]; and, if so, whether we should begin with an examination of the objects with which the several faculties and their functions are respectively concerned [§ 7].

b 9. ἔτι δ' εἰ μή...ἀλλὰ μόρια. We return to the fourth problem *πότερον ὁμοειδὴς ἅπασα ψυχὴ ἢ οὔ*. The intervening passage (402 b 2 *εἰ δὲ μὴ ὁμοειδὴς*... 8 *κατηγοροῖτο*) has traced the consequences of assuming the negative, *μὴ ὁμοειδὴς ἅπασα ψυχή*, or, which is the same thing, of assuming a variety of kinds of soul (*πολλαὶ ψυχαὶ καὶ ἀνομοειδεῖς*). The alternative now taken is to assume a variety of parts (*πολλὰ μόρια*) in the one kind of soul: cf. 413 b 13 *πότερον δὲ τούτων ἕκαστόν ἐστι ψυχὴ ἢ μόριον ψυχῆς κτέ.*, Simpl. 13, 27 *Εἰ μὴ πολλαὶ ψυχαί, φησιν, τουτέστιν εἰ μὴ κατ' εἶδος ἀλλήλων διαφέροιεν αἵ τε ἐν τοῖς διαφόροις καὶ ἐν ἑνὶ τῷ ἀνθρώπῳ, ἀλλὰ μόρια τὸ διάφορον οὐ κατ' εἶδος ἔχοντα διὰ τὸ ἑνὸς εἶναι μόρια, ἀλλὰ κατὰ λόγους, ὡς τὸ κοῦφον καὶ φωτιστικὸν τοῦ πυρός. τοῦτο δὲ ἐπὶ μὲν ἑνὸς ζῴου εἴτε ἀνθρώπου εἴτε τινὸς ἄλλου ἀληθές, ἵνα μία ἡ ἑνὸς ἑκάστου ᾖ ψυχή. εἴτε οὖν μόρια εἴτε δυνάμεις τὰς πολλὰς ἐν ἑκάστῳ λεκτέον ζῳάς, ὁμοειδεῖς μὲν κατὰ λόγον δὲ διαφερούσας ῥητέον.* The unity of each particular soul is safeguarded, but the diversity between soul and soul is attributed to a plurality of parts which may or may not all be found in any two diverse particular souls selected for comparison. Them. (4, 12 H., 7, 2 Sp.) confines his attention to the individual, citing Pl. *Theaet.* 184 D for the absurdity that each of us carries several souls as it were in a Trojan horse: *ἆρα πολλὰς θετέον ψυχὰς ὑπάρχειν τῷ ζῴῳ οἷον φυτικὴν θρεπτικὴν ὀρεκτικὴν διανοητικήν, ἐφ' ὧν καὶ αὗται* (quae quidem animalia has quoque habent), *ἢ πολλαὶ μὲν οὐκ εἰσὶν ἐν ἑκάστῳ ψυχαί...μιᾶς δὲ ὅλης αὐτῆς ὑπαρχούσης τὰ μόρια διενήνοχε.*

b 10 χαλεπὸν...11 ἀλλήλων. *Τούτων=τῶν μορίων.* Them. (4, 17 H., 7, 9 Sp.) *καὶ εἰ μιᾶς θετέον μέρη, χαλεπὸν τὸ διορίσαι, ποῖα καὶ πῶς· οἷον εὐθύς, ἆρ' ἕτερον τὸ θρεπτικὸν τοῦ αὐξητικοῦ καὶ ἄμφω τοῦ γεννητικοῦ, ἢ τῷ λόγῳ μὲν ἕτερα, τῷ δ' ὑποκειμένῳ ταὐτά;* The limits between thought and imagination or sense and intellect are hard to determine, and A.'s predecessors did not recognise all parts of the soul.

b 15 τὰ ἀντικείμενα. Cf. 415 a 20. The examples given—*τὸ αἰσθητόν, τὸ νοητόν*—explain the meaning clearly. When we perceive by sense or think, we perceive something and think something, viz. the sensible object or the object of thought, but why these objects are said to be *ἀντικείμενα* is not so clear: Bonitz associates this application of the term with the local sense by which one thing is said to be over against or opposite to another, *Ind. Ar.* 64 a 15 sensu locali, *De Cael.* I. 8, 277 a 23 *ἡ κύκλῳ* [sc. *φορά*] *ἔχει πως ἀντικείμενα τὰ κατὰ διάμετρον* ["circular motion virtually has opposite limits in the two extremities of the diameter of the circle" i.e. the circle travels from one end *A* of the diameter to the other end *B*, and back again]: *ib.* II. 2, 284 b 21 sq. *τὸ πρόσθεν καὶ τὸ ἀντικείμενον* (cp. b 32 *ὄπισθεν*). Ad hunc usum v. *ἀντικεῖσθαι* referendum videtur, quod res sensibus obiectae *ἀντικείμενα* nominantur *De A.* 402 b 15, *ib.* 415 a 20. At first this seems simpler than the old explanation which refers the term to the opposition of relatives, Them. (4, 36 H., 8, 7 Sp.) *καὶ γὰρ ἀντίκειται ὡς τὰ πρός τι τὸ μὲν νοητὸν πρὸς τὸν νοῦν, τὸ δὲ αἰσθητὸν πρὸς τὴν αἴσθησιν.* Philop. 39, 36; Simpl. 14, 17—21. This is one of the four subdivisions of logical opposition or contrast as laid down in *Cat.* 10. 11 b 17: *λέγεται δὲ ἕτερον ἑτέρῳ ἀντικεῖσθαι τετραχῶς, ἢ* (1) *ὡς τὰ πρός τι, ἢ* (2) *ὡς τὰ ἐναντία, ἢ* (3) *ὡς στέρησις*

καὶ ἕξις, ἢ (4) ὡς κατάφασις καὶ ἀπόφασις [cf. *Metaph.* 1018 a 20 sq.]...ὅσα μὲν οὖν ὡς τὰ πρός τι ἀντίκειται, αὐτὰ ἅπερ ἐστὶ τῶν ἀντικειμένων λέγεται ἢ ὁπωσοῦν ἄλλως, πρὸς αὐτά, οἷον τὸ διπλάσιον, αὐτὸ ὅπερ ἐστίν, ἑτέρου διπλάσιον λέγεται· τινὸς γὰρ διπλάσιον. καὶ ἡ ἐπιστήμη δὲ τῷ ἐπιστητῷ ὡς τὰ πρός τι ἀντίκειται, καὶ λέγεταί γε ἡ ἐπιστήμη αὐτὸ ὅπερ ἐστὶ τοῦ ἐπιστητοῦ. καὶ τὸ ἐπιστητὸν δὲ αὐτὸ ὅπερ ἐστὶ πρὸς τὸ ἀντικείμενον λέγεται, τὴν ἐπιστήμην· τὸ γὰρ ἐπιστητὸν τινὶ λέγεται ἐπιστητόν, τῇ ἐπιστήμῃ. As Trend. remarks, (p. 168) if ἀντικείμενον here bears its technical meaning, it can only denote the opposition between relative terms: hoc loco sola τὰ πρός τι conveniunt. Nam quae percipiuntur, quae cogitantur, ad perceptionem et cogitationem duplici modo pertinent, ut hae tum ab illis moveantur, tum ad ea regantur. Quo pertinet locus categoriarum 10. 11 b 24 ὅσα μὲν οὖν τῇ ἐπιστήμῃ [cited above]. Quo quidem oppositorum genere quod res est non tollitur sed servatur. In eo enim, quod scitur, sciendi notio manet. But in ἐναντιότης and στέρησις the presence of one opposite implies the absence or destruction of the other. Whatever the precise explanation, it is clear that ἀντικείμενον = the object of a mental operation, the external thing to which we are attending. We shall presently find ὑποκείμενον used in the same way for the object of perception, e.g. 422 b 32, 426 b 8, 10. Thus colour is the "subject-matter," the peculiar province, of sight, sound of hearing. Plato in the *Republic* (511 D, E) had described the faculties as set over against (ἐπί) things sensible and things intelligible respectively.

b 15. **πρότερα τούτων**, sc. τῶν ἔργων. This we should naturally expect, because τὰ ἔργα have just been mentioned. Further in 415 a 20 the same question is proposed and solved, where τούτων is clearly the operations τὸ νοεῖν καὶ τὸ αἰσθάνεσθαι. So the commentators. Them. (4, 32 H., 8, 2 Sp.) καὶ εἰ περὶ τῶν ἐνεργειῶν, ἆρα περὶ αὐτῶν πρότερον ἢ περὶ τῶν ὑποκειμένων ταῖς ἐνεργείαις; Simpl. 14, 17—24, Philop. 39, 35 sqq. Philop. remarks that A. ought to have written in b 16 τὸ αἰσθητὸν τῆς αἰσθήσεως καὶ τὸ νοητὸν τῆς νοήσεως. But if it is once settled that the operation of sense-perception (as better known) is to be studied before the faculty, if we further determine to study the sensible object before the operation, plainly the sensible object will be studied before the faculty. And as the ultimate aim is to arrive at knowledge of the obscure (part or) faculty, it is natural enough to speak of the study of the sensible object as preliminary to this.

402 b 16—403 a 2. It would seem that, while the determination of the essence or What is of use, as in geometry, for the study of the essential properties which follow from it, at the same time the study of these essential properties also materially contributes to the knowledge of what a thing really is. In fact, when we are in a position to give an account of all or most of the properties as they are confusedly and imperfectly presented to us, we shall best be able to define what a thing really is, such a definition forming the starting-point of all demonstration. Hence definitions which lead to no information about attributes are of use for dialectical purposes only and have no scientific value [§ 8].

b 16. **ἔοικε δ' κτέ.** This section deals generally with the logic of science conceived as an instrument of discovery, in particular with the relative importance of a study of essence and a study of properties, the two co-ordinate parts of the enquiry proposed (402 a 7 sq.). The series of problems (a 23 to b 16) is nearly complete. Only one remains (403 a 3 sqq.) ἀπορίαν δ' ἔχει κτέ. They have all been propounded with perfect impartiality, no clue being vouchsafed as to a future decision; but the alternatives presented in the last section (b 9—16) suggest the possibility that we may have to proceed indirectly

a posteriori by reasoning from the effect to the cause, and studying the properties in order to obtain a definition of the essence. Accordingly A. faces this possibility and justifies the procedure in question. The fields of enquiry are diverse. Sciences like geometry deduce properties from definltions, elsewhere the study of the properties precedes and contributes to the discovery of the definition. In any case, the possibility of deducing properties serves as a test of a scientific definition. See *note* on b 26. Cf. *Metaph.* 1035 b 16 *ἕκαστον γοῦν τὸ μέρος ἐὰν ὁρίζηται καλῶς, οὐκ ἄνευ τοῦ ἔργου ὁριεῖται, ὃ οὐχ ὑπάρξει ἄνευ αἰσθήσεως.*

b 17. τὸ τί ἐστι γνῶναι. Knowledge of the "What" is knowledge of the essence, (a 7) *τήν τε φύσιν καὶ τὴν οὐσίαν*, (a 13) *τὴν οὐσίαν καὶ τὸ τί ἐστι*, and is expressed in a definition. This becomes a principle or premiss of demonstration (b 25), and from such principles science deduces the essential properties *δι' ἀποδείξεως.*

b 17. θεωρῆσαι τὰς αἰτίας. Science is the knowledge of causes, *Anal. Post.* I. 2, 71 b 9—16, b 30 sq., I. 6, 75 a 31—37, I. 14, 79 a 23 sq. The conclusions of a particular science must be demonstrated, i.e. the facts they state must be shown to follow from premisses better known and causally connected with the first principles of the science (*ib.* I. 2, 71 b 17 sqq.), the middle term in all such syllogisms denoting the cause of the effect stated in the conclusion. Leaving on one side such conclusions as are merely accidental and depend upon extraneous causes, the rest are the essential properties of the peculiar province (*γένος*) of the given science, and ought therefore to admit of being demonstrated syllogistically from the first principles of that science upon which remotely or proximately they depend.

b 18. τῶν συμβεβηκότων ταῖς οὐσίαις, here as below b 21, 23, 26, the essential properties of things as explained above a 8 and a 15. Them. (5, 4 H., 8, 13 Sp.) *θεωρῆσαι τὰ καθ' αὑτὰ συμβεβηκότα τῷ πράγματι.* Simpl. 14, 30 *τὰ καθ' αὑτὰ συμβεβηκότα θεωρεῖν ταῖς οὐσίαις.* Philop. 40, 12 *γνῶναι τὰ οὐσιωδῶς ὑπάρχοντα τοῖς πράγμασιν...*20 *ἡ γνῶσις τῶν καθ' αὑτὸ καὶ πρώτως ὑπαρχόντων τοῖς πράγμασι. ταῦτα γάρ φησι συμβεβηκότα ἐνταῦθα.* The plural seems to show that *οὐσίαις* means the things with which the science deals and not essences as opposed to properties. Thus unit is *οὐσία ἄθετος* and point is *οὐσία θετός*, *Anal. Post.* I. 27, 87 a 35 sq.

b 18. ἐν τοῖς μαθήμασι. These definitions of "straight"—"curved"—"line"—and "surface"—illustrate what A. means by the fundamental principles of Plane Geometry (a 22 *ἀρχαὶ ἐπιπέδων*). Similarly the proposition that the angles of a triangle are together equal to two right angles (Eucl. I. 32) excellently illustrates what is meant by a property (*συμβεβηκός*) to be deduced *δι' ἀποδείξεως*: *Anal. Post.* I. 4, 73 b 30—74 a 3, I. 5, 74 a 25—b 4.

b 21. τὰ συμβεβηκότα συμβάλλεται. The properties contribute to the knowledge of the essence : exactly how A. does not state, for (b 22) *ἐπειδὰν γὰρ...*25 *κάλλιστα* is just as vague. It is presumed that we are acquainted with certain properties of a thing which we have still to define. Our knowledge of these properties cannot at this stage be scientific. Them. (5, 9 H., 8, 21 Sp.) *ἀδύνατον γὰρ ἄνευ τοῦ γνώριμον γενέσθαι τὸν ὁρισμὸν θηρεῦσαί τι τῶν ὑπαρχόντων δι' ἀποδείξεως.* Cf. Philop. 43, 3 *πῶς γὰρ ἐγχωρεῖ ἀποδεικτικῶς εἰδέναι τίνα ἐστὶ τὰ ὑπάρχοντα κατ' οὐσίαν τῷ πράγματι τὸν μὴ τὴν οὐσίαν αὐτοῦ ἐγνωκότα;* This statement is fully borne out by *Anal. Post.* I. 6, I. 31 and emphasized below (b 25) *πάσης γὰρ ἀποδείξεως κτέ.* It would seem, therefore, that in such cases the properties are better known to us, and we become acquainted with them, by sensation and experience before we know that they are deducible from the

definition of the thing; the method pursued throughout Book II. of the present treatise exemplifies this. Philop. 40, 30—41, 6 adduces from the *Physics* the definitions of τόπος, ἄπειρον, κενόν, χρόνος and that of hail from *Meteor.* I. 12, 347 b 34 sqq. as obtained in this way. **μέγα μέρος.** So *De Sensu* 1, 437 a 11 πλεῖστον συμβάλλεται μέρος. Cf. the Latin *maiorem partem.*

b 23. κατὰ τὴν φαντασίαν. *Ind. Ar.* 811 a 59: i.e. κατὰ τοῦτο ὃ φαίνεται ἡμῖν. This meaning must not be confused, as Trend. appears to confuse it, with that which the term bears when used technically for imagination, whether operation or result. As Bonitz explains, s.v.: verbo φαίνεσθαι rei obiectae species significatur, quatenus sensu animove percipitur; ex hac duplice vocabuli φαίνεσθαι notione explicatur, quod descendens inde verbum φαντάζεσθαι ac nomen φαντασία modo speciem rei obiectae significat sive veram sive fallacem, i.q. τὸ φαίνεσθαι, modo eam actionem, qua rerum imagines animo informamus. For the meaning "appearance to sense" or simple presentation, whether true or false, cf. *De A.* 428 b 3 φαίνεται μὲν ὁ ἥλιος ποδιαῖος, πεπίστευται δ' εἶναι μείζων τῆς οἰκουμένης with the parallel *De Insomn.* 2, 460 b 18 φαίνεται μὲν ὁ ἥλιος ποδιαῖος, ἀντίφησι δὲ πολλάκις ἕτερόν τι **πρὸς τὴν φαντασίαν**; *De Caelo* II. 13, 294 a 7, *De Sensu* 3, 439 b 6 ὥρισται ἡ φαντασία τῆς χρόας, "the colour produces a definite impression." Here (402 b 23) it is used of appearance to the mind, de rebus cogitatis Bz, as in *Eth. Nic.* 1114 a 31 sq. πάντες ἐφίενται τοῦ φαινομένου ἀγαθοῦ, τῆς δὲ φαντασίας οὐ κύριοι (i.e. οὐκ εἰσὶ κύριοι τοῦ φαίνεσθαί τι ἀγαθόν), where φαντασία is used as the verbal of φαίνεσθαι in the sense of the presentation or appearance to the mind. Especially in the phrase ἐμποιεῖν φαντασίαν = to produce an appearance or impression there is an approximation to the technical term imagination: *Ind. Ar.* 811 b 7 ex ipsa formula ἐμποιεῖν φαντασίαν apparet, quam prope coniunctus hic usus sit cum eo qui infra proponitur. *Metaph.* 1024 b 17 πρᾶγμα ψεῦδος [λέγεται] καὶ τούτου τὸ μὲν τῷ μὴ συγκεῖσθαι ἢ ἀδύνατον εἶναι συντεθῆναι...οὕτω γὰρ οὐκ ὄντα ταῦτα. τὰ δὲ ὅσα ἐστὶ μὲν ὄντα, πέφυκε μέντοι φαίνεσθαι ἢ μὴ οἷά ἐστιν ἢ ἃ μὴ ἔστιν, οἷον ἡ σκιαγραφία καὶ τὰ ἐνύπνια· ταῦτα γὰρ ἔστι μέν τι, ἀλλ' οὐχ ὧν ἐμποιεῖ τὴν φαντασίαν [the things exist, but not as they are presented; they produce or convey a false impression]. πράγματα μὲν οὖν ψευδῆ οὕτω λέγεται, ἢ τῷ μὴ εἶναι αὐτά, ἢ τῷ τὴν ἀπ' αὐτῶν φαντασίαν μὴ ὄντος εἶναι: 1025 a 5 τὰ πράγματά φαμεν ψευδῆ εἶναι, ὅσα ἐμποιεῖ φαντασίαν ψευδῆ. So also in the *Topics*, e.g. I. 1, 100 b 26 οὐθὲν τῶν λεγομένων ἐνδόξων ἐπιπόλαιον ἔχει παντελῶς τὴν φαντασίαν (i.e. εὐθὺς φαίνεται ψευδές): *ib.* IX. 4, 165 b 25, IX. 6, 168 b 29. In our present passage there is no suggestion that the presentment of the συμβεβηκότα is erroneous. It may, however, be imperfect or confused, if we compare it with the knowledge of the same συμβεβηκότα obtained by demonstration (δι' ἀποδείξεως). Until deduced from the definition of the essence the properties can never be known as necessary. In the enquiry concerning soul the operations are συμβεβηκότα, effects presumably demonstrable from the essence or definition if we knew it. But with these operations we are to a certain extent familiar, whereas we are still in search of the definition from which they ought to be demonstrable. Trend. denies that the properties can in this way be known in the full sense of the term: Restat igitur, ut συμβεβηκότα, donec a sensibus suscipiuntur neque a principiis demonstrantur, φαντασίᾳ tribuantur; nondum enim cognita sunt. Cf. Simpl. 15, 1 ὧν [τῶν καθ' αὑτὰ συμβεβηκότων] καὶ ἡ αἴσθησις καὶ ἡ φαντασία ἀντιληπτική, Them. (5, 10 H., 8, 23 Sp.) ἀλλ' ἱκανὸν καὶ τὸ φαινόμενον καὶ ἡ φαντασία [sc. οὐ δι' ἀποδείξεως], Philop. 42, 6 φαντασίαν φησὶ ἤτοι ὁλοσχερέστερον γνῶσιν ἤγουν τὰ φαινόμενα καὶ ἐναργῆ, φαντασίαν καλέσας παρὰ τὸ φανερὰ εἶναι. φαντασία seems to be used in the latter sense in *Phys.* IV. 4, 211 b 34.

To sum up. The fundamental meaning in φαντασία is presentation to the mind, first in the act of perception and afterwards when by the faculty of imagination in the technical sense this appearance is recalled and again presented to the mind. In modern psychology the distinction between the two is marked by the two terms presentation and representation, and A.'s technical φαντασία or τὸ φανταστικὸν is what would be called a representative faculty, though loosely used, as A. includes among its effects the production of the after-mage. Etymologically the earlier meaning of φαντασία, as of φαίνεσθαι, is presentation or appearance and this, its normal sense in Plato and earlier writers, is often retained by A., as here. See further note on 404 a 28.

b 23. ἀποδιδόναι. *Ind. Ar.* 80 a 54 ἀποδιδόναι sequente enunciatione interrogativa syn ὁρίζειν: cf. 406 a 27, *Eth. Nic.* 1095 a 20 περὶ δὲ τῆς εὐδαιμονίας, τί ἐστιν, ἀμφισβητοῦσιν καὶ οὐχ ὁμοίως οἱ πολλοὶ τοῖς σοφοῖς ἀποδιδόασιν. For the construction ἀποδιδόναι περί τινος without the dependent question Bz. cites *De Gen. et Corr.* II. 6, 333 b 4, *Meteor.* I. 1, 339 a 7, *Top.* I. 14, 105 b 26 ὁρισμῷ οὐκ εὐπετὲς ἀποδοῦναι περὶ αὐτῶν.

b 25. πάσης γὰρ ἀποδείξεως. *Metaph.* 1034 a 31 ἐν τοῖς συλλογισμοῖς πάντων ἀρχὴ ἡ οὐσία. ἐκ γὰρ τοῦ τί ἐστιν οἱ συλλογισμοί εἰσιν. Simpl. 15, 9 regards this as a reason given for trying to discover the definition: "We must after all find a definition, for without it we are unable to demonstrate any of the properties." Similarly Philop. 42, 15 sqq. τοῦτο δηλῶν ὅτι εἰ καὶ ἐκ τῆς ἐναργείας ἔχομέν τινα γνῶσιν τῶν συμβεβηκότων ταῖς οὐσίαις, ἀλλὰ ταύτην τὴν γνῶσιν ἔχομεν ἐξ αἰσθήσεως καὶ οὐκ ἀποδεικτικήν. ἐὰν δὲ τὸν ὁρισμὸν γνῶμεν, τότε ἐπιστημονικῶς δυνάμεθα τὴν γνῶσιν αὐτῶν ἑλεῖν ἀρχαῖς κεχρημένοι τοῖς ὁρισμοῖς. This was the view of Alex. Aphr. apud Philop. 43, 1—8. On the general notion as an ἀρχὴ cf. Maier, *Syllogistik*, II a, p. 404, n. 2, who has valuable remarks on the synthetic and analytic processes of thought.

b 26 ὥστε...403 a 2 ἅπαντες. From the scientific definition all essential properties can be deduced. Hence we are furnished with a test of a good definition. A. applies this to previous definitions of the soul, 408 a 3—5, 409 b 14—18; cf. Grote, *Aristotle*, p. 452, 2nd edition (Vol. II. p. 179, 1st edition): "Aristotle rejects all the theories proposed by antecedent philosophers...he pronounces it incorrect to say that the soul is moved at all. He farther observes that none of the philosophers have kept in view either the full meaning or all the varieties of soul: and that none of these defective theories suffices for the purpose that every good and sufficient theory ought to serve, viz. not merely to define the essence of the soul, but also to define it in such a manner that the concomitant functions and affections of the soul shall all be deducible from it."

403 a 2. διαλεκτικῶς. Philop. 44, 1 οὐ φυσικὸν ἀλλ' ἁπλῶς πρὸς δόξαν ὁρῶντα καὶ τὸ δοκεῖν τι λέγειν. A definition would be sufficient for the purposes of debate if it were accepted as valid by the interlocutor. A. opposes dialectic to demonstrative science (see *Topics*, passim); the two agree in employing the syllogism and arguing strictly from premisses to conclusion. But the premisses of dialectic are not necessarily or invariably true, they may include any current opinions (ἔνδοξα) which both the disputants agree to accept. Cf. *Metaph.* 995 b 23 περὶ ὅσων οἱ διαλεκτικοὶ πειρῶνται σκοπεῖν ἐκ τῶν ἐνδόξων μόνον ποιούμενοι τὴν σκέψιν. Philop. 44, 2—11 compares the dialectician's definition of anger given below, a 30 sqq., viz. ὄρεξις ἀντιλυπήσεως, with the physicist's ζέσις τοῦ περικαρδίου αἵματος δι' ὄρεξιν ἀντιλυπήσεως. The former fails to explain the accompanying symptoms (τὰ παρακολουθοῦντα πάθη), palpitation (παλμός), rise of temperature (θερμότης) and a flushed face. When the abstract logical consideration of a subject is censured and a preference is expressed for physical

enquiry into things in the concrete, A.'s complaint comes to thi , that the premisses with which the reasoning starts are not appropriate ar l the conclusions do not apply to the facts, *De Gen. An.* II. 8, 748 a 8 *οἱ γὰ, μὴ ἐκ τῶν οἰκείων ἀρχῶν λόγοι κενοί, ἀλλὰ δοκοῦσιν εἶναι τῶν πραγμάτων οὐκ ὄντες.* Yet such formal, superficial discussion, *λογικῶς ζητεῖν*, has its place and A is content to employ it, e.g. *Metaph.* 1029 b 13.

a 2. κενῶς. Simpl. 15, 22 *ὡς τῆς φύσεως καὶ τοῦ βάθους τῶν ὄντι ν ἀποπίπτον κενὸν προσαγορεύει*: Philop. 43, 34 *τουτέστι κατὰ κενοῦ φέρεσθαι καὶ μὴ ἐφάπτεσθαι τῆς φύσεως τοῦ πράγματος, μηδὲ οἱονεὶ ἀπερείδειν τῷ πράγματι τὴν πέζαν τῆς διανοίας, ἀλλὰ μετέωρον εἶναι.* Cf. *Eth. Eud.* I. 8, 1217 b 21 *λογικῶς καὶ κενῶς*, *De Gen. An.* II. 8, 748 a 8 *καθόλου λίαν καὶ κενός*, *Eth. Nic.* 1096 b 20 *μάταιον ἔσται τὸ εἶδος*, *Pol.* 1260 a 25 *καθόλου γὰρ οἱ λέγοντες ἐξαπατῶσιν ἑαυτούς.*

403 a 3—10. As regards the attributes or affections of the soul, there is the important and difficult problem, whether they are all shared with the body or whether the soul has any affection peculiar to itself. The dependence of the soul upon the body is apparent in most of its functions, whether active or passive, e.g. in anger, desire, sensation. Thinking would seem to form an exception, though if it be a species of imagination, or not independent of imagination, even thought would be dependent upon the body [§ 9].

a 3. ἀπορίαν δ' ἔχει. The remainder of this chapter is devoted to the last problem, viz., Are there any properties of soul which are independent of body? Its discussion leads to a digression on the subject-matter of various branches of science, from which A. returns in the concluding sentence, b 16—19. **πότερόν ...4 κοινά.** This is best understood if we revert to 402 a 9 sq., where the distinction drawn must be the same, though the order of the alternatives is reversed. Consequently the attributes or properties here said to be shared by the possessor of the soul are those referred to in the earlier passage as belonging to the animal in virtue of the soul (*δι' ἐκείνην*), i.e. belonging to the animal as a whole because it is animate (*ἔμψυχον*). Such attributes or properties are distinguished from those that are peculiar to the soul itself and not shared by the body which it animates. As in *Metaph.* 1038 b 10 sqq., *ἴδιον = ὃ οὐχ ὑπάρχει ἄλλῳ, κοινόν = ὃ πλείοσιν ὑπάρχειν πέφυκεν.*

a 4. τοῦ ἔχοντος. By this we must understand *τοῦ ζῴου = τοῦ ἐμψύχου σώματος.* The two phrases *τὸ ζῷον ἔχει ψυχήν* and *τῷ ζῴῳ ὑπάρχει ψυχή* are equivalent, cf. *Metaph.* 1040 b 23 *οὐδενὶ γὰρ ὑπάρχει ἡ οὐσία ἀλλ' ἢ αὐτῇ τε καὶ τῷ ἔχοντι αὐτήν, οὗ ἐστὶν οὐσία.* The soul is not the *οὐσία* of an inanimate or of a dead body, 412 b 25 sq., but of a living body, 415 b 8 *τοῦ ζῶντος σώματος αἰτία καὶ ἀρχή*, b 11 *τῶν ἐμψύχων σωμάτων ἡ ψυχὴ αἰτία.* So 412 a 15 *μετέχον ζωῆς = ἔμψυχον.* Parallels may be cited for *τοῦ ἔχοντος*, e.g. 416 b 18, 21 *τὸ μὲν τρέφον ἐστὶν ἡ πρώτη ψυχή, τὸ δὲ τρεφόμενον τὸ ἔχον ταύτην σῶμα* (i.e. *τὸ ἔμψυχον σῶμα ᾗ ἔμψυχον*, *ib.* b 9 sqq., b 11), 428 b 17 and 408 b 26 sq. *τουδὶ τοῦ ἔχοντος ἐκεῖνο, ᾗ ἐκεῖνο ἔχει* (cf. 408 b 28 *τοῦ κοινοῦ, ὃ ἀπόλωλεν*). As the whole body is animate by the presence of soul, so also is any part of it: cf. *Metaph.* 1036 b 30—32. See *note* on 422 b 23, **ἐντός**: also *De Part. An.* II. 1, 647 a 24—31 where, a 27, we read *τὸ ἔχον πρῶτον μόριον τὰς τοιαύτας ἀρχάς* (viz. *τὴν αἰσθητικὴν* and *τὴν κατὰ τόπον κινητικήν*). In *De Mem.* I. 450 a 30 *τὸ γιγνόμενον διὰ τῆς αἰσθήσεως ἐν τῇ ψυχῇ καὶ τῷ μορίῳ τοῦ σώματος τῷ ἔχοντι αὐτὴν* the last word *αὐτὴν* may possibly replace *αἴσθησιν*, but, as the heart or its analogue is the bodily part in question, a comparison of *Metaph.* 1035 b 25 sq. would suggest that *τῷ ἔχοντι αὐτὴν* [int. *τὴν αἰσθητικὴν ψυχήν*] corresponds to *ἐν ᾧ πρώτῳ ὁ λόγος καὶ ἡ οὐσία*, or, in other words, *ἡ ψυχή.*

a 5. φαίνεται δέ, sc. *ἡ ψυχή. φαίνεται* evidentiam significat, non dubitationem.

The appeal is to experience, to the facts, especially the evidence of sense. Cf. 404 b 5, 406 b 24 with the infinitive, as 406 a 30, 407 a 15 with the participle, *et saepe*. So also *φανερόν ἐστιν*.

a 6. **πάσχειν οὐδὲ ποιεῖν.** The soul has no passive affection or active function, i.e. no passive or active property of its own (*ἴδιον*). Cf. a 10 sq. *ἔργων ἢ παθημάτων*, 409 b 15 *τὰ πάθη κα ὶτὰ ἔργα τῆς ψυχῆς*, 411 b 2 *τῶν ἄλλων ἕκαστον ποιοῦμέν τε καὶ πάσχομεν*. That the reference to a subject is the more correct mode of expression follows from 408 b 13—15.

a 7. **ὅλως αἰσθάνεσθαι.** Cf. *De Sensu* I. 436 a 7 *κοινὰ τῆς ψυχῆς ὄντα καὶ τοῦ σώματος, οἷον αἴσθησις καὶ μνήμη καὶ θυμὸς καὶ ἐπιθυμία καὶ ὅλως ὄρεξις, καὶ πρὸς τούτοις ἡδονή τε καὶ λύπη*. A. sums up his own view of sensation thus, *De Sensu* I. 436 b 6 *ἡ δ' αἴσθησις ὅτι διὰ σώματος γίγνεται τῇ ψυχῇ, δῆλον*. Apparently anger and courage, as well as desire, are referred to the sensitive soul, *τὸ αἰσθητικόν*. In Plato, e.g. *Tim.* 69 D, 77 B (cf. 42 A), there is an attempt to distinguish two uses of the word *αἴσθησις*, which in Greek had to do duty for the feeling of pleasure or pain as well as for the cognitive element of sensation proper. As Professor Beare points out (*Greek Theories of Elementary Cognition*, pp. 270, n. 3, 273, n. 3) there was an analogous double use of the English word 'feeling.' In psychological works of the last century feeling had to do duty for the sense of pleasure and pain as well as for the factor of cognition. **ὅλως** (*Ind. Ar.* 505 b 47) ab enumeratis singulis rebus transitum parat ad universum genus. Cf. 429 b 21, 431 b 10 and 436 a 9 quoted above.

a 8. **μάλιστα.** Join with *ἴδιον*. **καὶ τοῦτο**, sc. *τὸ νοεῖν*. So in a 9 *οὐδὲ τοῦτο*. **φαντασία τις.** A species of imagination. The term is here used in its technical sense, and not as in 402 b 23. See III., c. 3 and 433 a 9 *εἴ τις τὴν φαντασίαν τιθείη ὡς νόησίν τινα*.

a 9. **ἢ μὴ ἄνευ φαντασίας.** This more closely approximates to the results obtained in III., cc. 4—8, especially 431 a 14 sq., 16 sq., 431 b 2, 4—8, 432 a 8 sq., 13 sq., *De Mem.* I. 449 b 30 sq. **οὐκ ἐνδέχοιτ' ἂν κτέ.** because *φαντασία* in the technical sense implies antecedent sensation and therefore body. Cf. 427 b 15 *αὐτή τε* [sc. *ἡ φαντασία*] *οὐ γίγνεται ἄνευ αἰσθήσεως*, 429 a 1 *ἡ φαντασία ἂν εἴη κίνησις ὑπὸ τῆς αἰσθήσεως τῆς κατ' ἐνέργειαν γιγνομένη*, 425 b 24 *ἀπελθόντων τῶν αἰσθητῶν ἔνεισιν αἱ αἰσθήσεις καὶ φαντασίαι ἐν τοῖς αἰσθητηρίοις*, *Rhet.* 1370 a 28 sqq., *De Mem.* I. 450 a 27—32. Memory is the revival of this mental picture, and of memory A. says *δῆλον γὰρ ὅτι δεῖ νοῆσαι τοιοῦτον τὸ γιγνόμενον διὰ τῆς αἰσθήσεως ἐν τῇ ψυχῇ καὶ τῷ μορίῳ τοῦ σώματος τῷ ἔχοντι αὐτήν, οἷον ζωγράφημά τι τὸ πάθος, οὗ φαμὲν τὴν ἕξιν μνήμην εἶναι· ἡ γὰρ γιγνομένη κίνησις* [i.e. *φαντασία*] *ἐνσημαίνεται οἷον τύπον τινὰ τοῦ αἰσθήματος, καθάπερ οἱ σφραγιζόμενοι τοῖς δακτυλίοις*. The optative with *ἂν* expresses the logical consequence, as often, e.g. 403 a 11, 12, 406 b 4, where it follows 406 a 31 *εὔλογον*, and 32 *εἰπεῖν ἀληθές*.

403 a 10—27. This involves the further question of the soul's separate existence. If there is any activity or affection of the soul in which the body does not share, its separate existence will be possible: if not, it will not be separable from the body. In the latter case its mode of existence is comparable to that of the straight line, which has many properties, *quâ* straight, but is never found apart from something corporeal on which its existence depends. Experience confirms the view that most attributes of the soul are similarly dependent upon the body, as the necessary condition of their existence, and this is shown quite clearly by such emotions as anger or fear. It follows from this that they are forms or notions immersed in matter, i.e. the matter is a necessary condition of their essence, and this dependence upon matter is seen when they come to be defined [§ 10].

a 11. ἴδιον, sc. τῆς ψυχῆς (so a 12 ἴδιον αὐτῆς), i.e. not shared by the body, μὴ κοινὸν καὶ τοῦ ἔχοντος. **χωρίζεσθαι,** as in 413 b 26; cf. 403 a 12 οὐκ ἂν εἴη χωριστή. This terminology is regularly employed to indicate separate or independent existence.

a 12. οὐκ ἂν εἴη χωριστή. If there is no property or function of the soul that is not shared by the body, the soul will not have a separate or independent existence. A decision in this sense excludes the possibility which the other alternative leaves open. **ἀλλὰ καθάπερ τῷ εὐθεῖ.** *Ind. Ar.* 354 a 6 omittitur etiam aliquoties ea enunciatio demonstrativa, ad quam enunciatio a καθάπερ [vel ὥσπερ] incipiens referatur, cf. *Probl.* III. 17, 873 b 20 (on *De A.* 409 a 2 and 431 a 17, ὥσπερ with no οὕτως apparent, see *notes* ad loc.). Something must be supplied, e.g. περὶ τὴν ψυχὴν οὕτως ἔχει. A. pursues the comparison, but does not return to the main proposition for the sake of which the comparison is instituted.

a 12. τῷ εὐθεῖ ᾗ εὐθύ, "the straight line as such," i.e. the straight line *in abstracto* as defined in geometry, which is unquestionably the meaning of τὸ εὐθύ in a 15, rectum *quâ* rectum. *Quâ*, the Latin equivalent of ᾗ, was made familiar by the schoolmen. By τῷ εὐθεῖ Sophonias understood τῷδε τῷ εὐθεῖ τῷ ἐν χαλκῷ ἢ ἐν λίθῳ, the edge of the brazen or stone ruler. To this Bonitz (*Hermes* VII. p. 416 sqq.) objects as not justified by the language, and inconsistent with the purpose for which the illustration is introduced. As to the language: "Soll εὐθύ in dem Dativ τῷ εὐθεῖ eine andere Bedeutung haben, als in dem bestimmenden Zusatze ᾗ εὐθύ, so scheint es ein unerlässliches Erforderniss zu sein, dass zu εὐθεῖ noch ein bestimmendes Wort gesetzt sei, aus dem dieser Unterschied ersichtlich würde, z. B. τῷ εὐθεῖ ξύλῳ, σώματι, τῷδε τῷ εὐθεῖ; ohne einen solchen Zusatz hiesse es doch mehr als billig ist von dem Leser beanspruchen, wenn er auf den blossen Anlass des ᾗ unter dem Worte εὐθύ in dieser Verbindung verschiedene Begriffe denken soll." This is a strong argument, but not absolutely convincing. Philoponus is right in saying (49, 18 sq.) that τῷ εὐθεῖ is ambiguous, and Torstrik satisfied himself that the words might mean not only (1) abstractam recti notionem, τὸ τί ἦν εἶναι, definitionem recti or (2) lineam rectam mathematicam, rectum mathematicum quod mathematico corpori insit, but also (3) in materia sensili rectum expressum. Further, the mention of the brazen sphere is confusing. But when we turn to the purpose of the illustration all ambiguity is cleared away. If for the illustrative example we substitute the proposition which it is introduced to suggest, we shall have to write with Bonitz: τῇ ψυχῇ (not τῷ ζῴῳ), ᾗ ψυχή, πολλὰ συμβαίνει, οἷον αἰσθάνεσθαι τῶν αἰσθητῶν, οὐ μέντοι γ' αἰσθήσεται χωρισθεῖσα αὐτὴ καθ' αὑτὴν ἡ ψυχή. This implies that by τῷ εὐθεῖ as well as by (a 15) τὸ εὐθύ is meant the straight line *in abstracto* and not the edge of the ruler or any other concrete object. For the simile is introduced merely to show that under certain conditions the soul in itself, and not the animate being, οὐκ ἂν εἴη χωριστή. Themistius, then, has caught A.'s intention in using the simile when with unusual freedom he paraphrases (6, 34 H., 11, 24 Sp.) πῶς οὖν λέγομεν τὴν ψυχὴν φιλεῖν καὶ μισεῖν καὶ ὀργίζεσθαι; πῶς δὲ λέγομεν τὴν εὐθεῖαν ἅπτεσθαι τῆς σφαίρας κατὰ στιγμήν; οὐ γὰρ ὅτι ἡ εὐθεῖα καθ' ἑαυτὴν (οὐδὲν γάρ ἐστιν), ἀλλ' [sc. λέγομεν] ὅτι ὁ κανὼν ὁ εὐθύς, οὐδὲ ὅτι τῆς σφαίρας καθ' ἑαυτήν, ἀλλ' ὅτι τῆς χαλκῆς· ἀχώριστον γὰρ καὶ τὸ εὐθὺ καὶ τὸ σχῆμα τοῦ ξυλίνου κανόνος καὶ τῆς χαλκῆς σφαίρας, καὶ ἡ κατὰ στιγμὴν ἁφή, μᾶλλον δὲ ὅλως ἁφὴ τοῦ συνόλου πρὸς τὸ σύνολον. οὕτω δὲ καὶ τὰ τῆς ψυχῆς πάθη πάντα ἔοικεν εἶναι κοινὰ μετὰ τοῦ σώματος.

a 13. πολλὰ συμβαίνει. Compare the passage where the nature of the objects of mathematics is fully discussed, *Metaph.* 1078 a 5 πολλὰ δὲ συμβέβηκε καθ' αὑτὰ τοῖς πράγμασιν ᾗ ἕκαστον ὑπάρχει τῶν τοιούτων,...ὥστε καὶ ᾗ μήκη μόνον

καὶ ἡ ἐπίπεδα [sc. πολλὰ συμβέβηκε καθ' αὑτὰ]...17 ὥστ' εἴ τις θέμενος κεχωρισμένα τῶν συμβεβηκότων σκοπεῖ τι περὶ τούτων ᾗ τοιαῦτα, οὐδὲν διὰ τοῦτο ψεῦδος ψεύσεται ..., 21 ἄριστα δ' ἂν οὕτω θεωρηθείη ἕκαστον, εἴ τις τὸ μὴ κεχωρισμένον θείη χωρίσας. Cf. 1077 b 22—30. In these passages μῆκος=εὐθεῖα γραμμή=τὸ εὐθὺ ᾗ εὐθύ.

a 13. τῆς χαλκῆς σφαίρας. So in *Metaph.* 1036 a 21 A. speaks of ἡ χαλκῆ ὀρθή. Possibly a sphere and other geometrical figures in brass were familiar objects in the lecture room. Cf. also *ib.* 997 b 35 οὔτε γὰρ αἱ αἰσθηταὶ γραμμαὶ τοιαῦταί εἰσιν οἵας λέγει ὁ γεωμέτρης (οὐδὲν γὰρ εὐθὺ τῶν αἰσθητῶν οὕτως οὐδὲ στρογγύλον· ἅπτεται γὰρ τοῦ κανόνος οὐ κατὰ στιγμὴν ὁ κύκλος, ἀλλ' ὥσπερ Πρωταγόρας ἔλεγεν ἐλέγχων τοὺς γεωμέτρας). Note that, as there ὁ κύκλος without qualification touches the ruler, the example of an αἰσθητὴ γραμμή, so here (403 a 13) τὸ εὐθὺ ᾗ εὐθὺ has the property of touching τῆς χαλκῆς [i.e. αἰσθητῆς] σφαίρας. Protagoras objected that the objects of the geometer were not sensible objects. Contact at a point, as the point is defined in geometry, is not borne out by sense.

a 14. οὕτω. So E alone: all the other MSS. have τούτου, which was also the text of Philoponus and Simplicius. Whether they join τούτου with χωρισθέν or make it governed by ἅψεται is, in the opinion of Bonitz l.c., not clear: Philop. 49, 34 ἐν δὲ τῷ εἰπεῖν **οὐ μέντοι γε ἅψεται τούτου χωρισθὲν τὸ εὐθὺ** τὴν εὐθύτητα αὐτὴν [sc. λαμβάνει]. αὕτη οὖν, φησί, χωρισθεῖσα τοῦ ὑποκειμένου οὐκέτι πείσεται τοῦτο, Simpl. 18, 13 **οὐ μέντοι ἅψεται τούτου χωρισθὲν τὸ εὐθύ.** τούτου μὲν τοῦ ὑποκειμένου λέγει, **εὐθὺ** δὲ νῦν τὸ ὡς χαρακτῆρα καὶ τὸ ὡς εὐθύτητα. Trend. and Torst. keep the reading τούτου, which they join with χωρισθέν. The latter indeed pronounces οὕτω to be an error due to the scribe of E (scripturae vitio) and adds "τοῦτο enim rem sensilem quasi digito monstrat." But the usual Aristotelian pronoun for a concrete thing is ὅδε, not οὗτος, and even then some addition is required as in ὅδε ὁ ἄνθρωπος, τόδε τι. On the other hand οὕτω, if taken with ἅψεται and as=κατὰ στιγμήν, gives the following sense; the abstract straight line will not touch the brazen sphere at a point, for it has no separate existence. The properties of soul may be illustrated by the properties of a straight line, one of them being contact with a sphere at a point. To this will correspond some active or passive function of soul (e.g. αἴσθησις). But just as contact implies concrete bodies, so that the straight line *in abstracto* will only have this property as long as it is embodied in something concrete, so the soul will cease to exercise its active or passive functions when separated from the body. As a matter of fact, the straight line *in abstracto* has no separate existence apart from the particular concrete things which are straight, Philop. 50, 3 ἐπεὶ μηδὲ ὑφέστηκε, and, in the hypothetical case we are considering, the soul will be like it in this respect. That the comparison of soul to the mathematical straight line is introduced for a special purpose in working out one of the two alternatives suggested by the problem we are considering is clear from 403 b 19 καὶ οὐχ ὥσπερ γραμμή.

a 15. ἀχώριστον γάρ...τινός ἐστιν. A.'s doctrine as to the question what are the objects of the mathematical sciences is most fully explained in *Metaph.* M. 3. See also the excerpts above in the note on a 13 **πολλὰ συμβαίνει.** It is thus summarised *Ind. Ar.* 860 a 50 τὰ μαθηματικὰ ἀχώριστα, χωριστὰ τῇ νοήσει, θεωρεῖται ᾗ χωριστά. *Metaph.* 1026 a 9 ὅτι μέντοι ἔνια μαθήματα ᾗ ἀκίνητα καὶ ᾗ χωριστὰ θεωρεῖ, δῆλον, *ib.* 13 ἡ μὲν γὰρ φυσικὴ περὶ χωριστὰ μὲν ἀλλ' οὐκ ἀκίνητα, τῆς δὲ μαθηματικῆς ἔνια περὶ ἀκίνητα μὲν οὐ χωριστὰ δ' ἴσως [ἐστὶν] ἀλλ' ὡς ἐν ὕλῃ. 1059 b 13 χωριστὸν γὰρ αὐτῶν [sc. τῶν μαθηματικῶν] οὐδέν. *Phys.* II. 2, 193 b 24 καὶ γὰρ ἐπίπεδα καὶ στερεὰ ἔχει τὰ φυσικὰ σώματα καὶ μήκη καὶ στιγμάς, περὶ ὧν σκοπεῖ ὁ μαθηματικός. ἔτι ἡ ἀστρολογία [astronomy in general, both mathematical and physical] ἑτέρα ἢ μέρος τῆς φυσικῆς· εἰ γὰρ τοῦ φυσικοῦ τὸ τί ἐστιν ἥλιος καὶ

σελήνη εἰδέναι, τῶν δὲ συμβεβηκότων καθ' αὑτὰ μηδέν, ἄτοπον, ἄλλως τε καὶ ὅτι φαίνονται λέγοντες οἱ περὶ φύσεως καὶ περὶ σχήματος σελήνης καὶ ἡλίου, καὶ πότερον σφαιροειδὴς ὁ κόσμος καὶ ἡ γῆ ἢ οὔ. περὶ τούτων μὲν οὖν πραγματεύεται καὶ ὁ μαθηματικός, ἀλλ' οὐχ ᾗ φυσικοῦ σώματος πέρας ἕκαστον. οὐδὲ τὰ συμβεβηκότα θεωρεῖ ᾗ τοιούτοις οὖσι συμβέβηκεν. διὸ καὶ χωρίζει· χωριστὰ γὰρ τῇ νοήσει κινήσεώς ἐστι, καὶ οὐδὲν διαφέρει, οὐδὲ γίνεται ψεῦδος χωριζόντων, ib. 194 a 9 *ἡ μὲν γὰρ γεωμετρία περὶ γραμμῆς φυσικῆς σκοπεῖ, ἀλλ' οὐχ ᾗ φυσική, ἡ δ' ὀπτικὴ μαθηματικὴν μὲν γραμμήν, ἀλλ' οὐχ ᾗ μαθηματικὴ ἀλλ' ᾗ φυσική.* This doctrine is consistently maintained throughout the *De A.* and is the basis of the phrase by which the objects of mathematics are often denoted, viz. *τὰ ἐν ἀφαιρέσει ὄντα* (or *λεγόμενα*). The relevant passages include 403 b 14 sq., 429 b 18—20, 432 a 3—6, where see *notes*.

a 16. πάθη must be understood as in 403 a 3 in the wider sense of attributes generally (402 a 8 *note*) and not restricted to specific emotions (animi perturbationes, affectus, affectiones) as defined and enumerated by Aristotle, *Eth. Nic.* 1105 b 20 sqq., and described in detail, *Rhet.* II. cc. 2—11. That the word has the wider sense in 403 a 3 sqq. is plain from the mention of *αἰσθάνεσθαι* and *νοεῖν* (cf. *πάσχειν οὐδὲ ποιεῖν* a 6 sq.), and to restrict it now would be fatal to the argument. A.'s object in what follows is to prove that every mental operation has its bodily concomitant. As many of the bodily changes are internal and unperceived, he argues indirectly (*σημεῖον δὲ* a 19) from the difference of temperament in man and man. This difference of temperament cannot be due to the object, i.e. the external causes (*παθημάτων* a 20) which tend to excite emotion, for in that case the same slight would rouse all men alike to anger, the same terrors would excite fear in all alike, whereas it is notorious that the choleric temper is prone to anger on trivial occasions and the melancholic temper so timid that it gives way to groundless alarms, these differences between man and man being due to the bodily constitution. Thus anger cannot take place without the body, without a concomitant affection of a definite part of the body, and this bodily affection cannot take place without the soul, for the body in which it takes place is at all events animate: *τὸ ἔργον οὐχ ὑπάρχει ἄνευ αἰσθήσεως.* What is said of anger and fear must be understood to apply to all the mental functions. A. chose the emotions to illustrate the wider sense of operations or attributes simply because the dependence on the body, though nowhere perfectly clear, is more obvious in their case. The analogous argument from the dependence of sensation upon sense-organs will be found 408 b 20 sqq.

a 18. ἅμα γὰρ τούτοις πάσχει τι, is in some degree affected simultaneously with them, i.e., whenever there is a mental affection, a bodily affection accompanies it. The mental and the bodily processes go together. The bodily change may, however, be internal and not capable of direct verification; hence A. resorts to the argument from signs.

a 20. παθημάτων. "Causes of mental change," Alex. Aphr. *De An.* 13, 1 *ἃ ἢ ὀργὴν ἢ φόβον ἢ ἐπιθυμίαν ἤ τι τοιοῦτο πάθος ἄλλο κινεῖν οἷά τε.* Bonitz, *Ind. Ar.* s.v., after saying that the meanings of *πάθος* and *πάθημα* in general agree, notes as one point of dissimilarity usum voc. *πάθος* excedit *πάθημα*, ubi non motum et mutationem, sed eius causam significat (554 b 26 sqq.). Thus this shade of meaning must be distinguished here from that, with which some have confused it, of *πρᾶξις φθαρτικὴ ἢ ὀδυνηρά*, for which cf. *De Resp.* 17, 479 a 15 *καὶ μικρῶν παθημάτων ἐπιγινομένων ἐν τῷ γήρᾳ ταχέως τελευτῶσιν.* The incentives to anger or fear are not necessarily calamities or painful occurrences.

a 22. ὀργᾷ...ὀργίζηται. The word *ὀργᾶν* is used of buds swollen to bursting (Lat. *turgescere*): but also of the human body, when the blood is up or in a ferment, cf. *Probl.* VII. 2. 886 a 32 *ἐὰν ὀργῶν τύχῃ τὸ σῶμα.* That A. observed the etymological connexion of *ὀργίζεσθαι* with *ὀργᾶν* seems plain from the context. But the subject to *ὀργίζηται* must be personal. This is one of many instances of subject omitted. The subject omitted can generally be supplied from the verb, as *ὁ ὀργιζόμενος* here: cf. 418 a 22, 23 (bis), 428 b 1, 3, 5, 7, 430 b 3, 8, 10, 12, 15, 16, 22, 23, 431 a 20, 24, b 6, 7, 8, 9, 13. For a typical case see 421 b 30 *ὁρᾷ*: cf. 425 b 13. Sometimes it is safer to supply a subject in the neuter, especially with *αἰσθάνεσθαι* or *νοεῖν*, on the analogy of 417 a 10 sq., b 8 *τὸ φρονοῦν, ὅταν φρονῇ*, 426 b 17 *κρίνειν τὸ κρῖνον*, 430 b 24 *τὸ γνωρίζον.* Sometimes the first person plural has preceded, e.g. 420 a 14, 425 b 13. There are doubtful cases, e.g. 423 a 18, 429 b 13, 430 a 25. *Ind. Ar.* 589 b 47 tertiam personam singularis non addito pronomine *τὶς* notum est ad significandum subiectum universale (germanice "man") ita usurpari, ut iam in superioribus aliquo modo, veluti in infinitivo (cf. Krüger, *gr. Gr.* 61, 4, 5) vel in substantivo numeri pluralis, a quo ad singularem indefinitum transitur, illud subiectum universale contineatur. Hos fines vulgati usus raro excedit Ar. (pleraque exempla quae congesserunt Zell. ad *Eth. N.* III. 1. 6, Wz. ad *Org.* 3 b 22 a vulgari usu non differunt), veluti *Eth. Nic.* 1152 b 16 *ἔτι ἐμπόδιον τῷ φρονεῖν αἱ ἡδοναί, καὶ ὅσῳ μᾶλλον χαίρει, μᾶλλον.* *Ind. Ar.* 763 a 25 in omittendo pron. indef. *τίς, τί* Ar. easdem fere leges observat ac reliqui scriptores: ad exempla allata insolentioris omissionis adde *De Gen. et Corr.* I. 4. 319 b 11.

a 24. ἐν τοῖς πάθεσι γίνονται, sc. *οἱ ἄνθρωποι*, the ellipse so common with *φασί.* The expression *ἐν τοῖς πάθεσι γίνεσθαι* (cf. Eng. "get in a passion") is an elaboration of the simple verb *πάσχειν* used above. Cf. *Pol.* 1287 b 3 *ἐν πάθει ὄντες*, *De Insomn.* 2. 460 b 3 *ἀπατώμεθα...ἐν τοῖς πάθεσιν ὄντες, ἄλλοι δ' ἐν ἄλλοις, οἷον ὁ δειλὸς ἐν φόβῳ, ὁ δ' ἐρωτικὸς ἐν ἔρωτι.*

a 25. λόγοι ἔνυλοι. *Λόγος* = notion, content of definition, which is opposed, precisely as is form or quiddity, to matter. Cf. 403 b 2, first *note.* The compound adjective *ἔνυλος* might conceivably be taken, on the analogy of *ἔνυδρος*, in either of two ways, as (1) immanent in matter, or (2) having matter in it, apparently favoured by *Metaph.* 1033 a 5. *Ind. Ar.* s. v. mentions no other use of the compound in A., but it is frequent in the Greek commentators, who interpret it according to (1) and in 430 a 6 replace A.'s *τὰ ἔχοντα ὕλην* (as opposed to *τὰ ἄνευ ὕλης*) by *ἔνυλα*: Them. 97, 37 sq. H., 180, 12 sqq. Sp., Simpl. 239, 7, Philop. 534, 13. So Alex. Aphr. *Ἀπ. καὶ λύσ.* 55, 9 interprets *ἔνυλον εἶδος* as *τό τινος εἶδος.* Cf. ad h. l. Them. 7, 25 H., 13, 8 Sp. *ἐν ὕλῃ τὸ εἶναι ἔχοντες*, Philop. 54, 15 sq., Simpl. 20, 6. See also 403 b 11 and *note.*

a 26. οἷον τὸ ὀργίζεσθαι. In the *Rhetoric* 1378 a 31 sqq. anger is defined as a painful desire (*ὄρεξις*) of apparent vengeance, on account of an apparent slight done to one's self or one's friends, when the slight is unjustifiable. This definition, which leaves out the physical aspect, is represented in a condensed form by *ὄρεξις ἀντιλυπήσεως* below. **κίνησις.** This word covers at once physical movement and psychical change. And thus the definition which it introduces includes in brief both types of definition, the physicist's and the dialectician's, which are distinguished below. **σώματος ἢ μέρους ἢ δυνάμεως.** By thus adding "or of a part or of the faculty belonging to it" Aristotle is providing for those cases where the mental process is thought not to affect the body as a whole, but to be confined to some particular organ, as seeing to the eye. Such an organ operates or functions in virtue of the faculty which resides in it and constitutes it an organ or instrument: the organ implies the faculty, the eye vision, as will

be explained 424 a 24—28. The physical fact accompanying anger is, as we shall see, a ferment of the blood, or of the heat, about the heart.

a 27. ὑπὸ τοῦδε. The external cause which excites anger is defined in the *Rhetoric* l.c. as *φαινομένη ὀλιγωρία.* **ἕνεκα τοῦδε.** The final cause of anger is defined below as *ἀντιλύπησις* and in the *Rhetoric* l.c. as *τιμωρία.*

403 a 27—b 19. A digression upon the relation of psychology to physics or the science of nature. To study the soul as thus dependent upon the body falls, then, to the natural philosopher. The emotions would be differently defined by the mere dialectician and the mere biologist: e.g. anger to the one is a desire of revenge, to the other a ferment of blood about the heart, or the like; just as a house may be defined, on the one hand, by its end, protection from the weather, on the other hand, by the particular materials, the stones, bricks and timber, of which it is composed. A complete definition, whether of anger or of house, must include both end and materials; it must take account of the form as well as of the matter: and such a complete definition alone satisfies the requirements of physics, the true science of nature. But what of the two incomplete definitions, viz. that which takes account of the form, neglecting the matter, and that which deals with the matter to the exclusion of the form? The truth is that the properties of things are forms which fall for investigation under different branches of science according to the varying degrees in which they are implicated in matter. There is no science that investigates the properties of matter which are not separable, nor even regarded as separable, from matter. Physics treats of all the properties of such and such bodies and of such and such matter, viz. of natural bodies capable of motion, and of sensible matter. When the properties of bodies are not thus regarded, they lie outside of physics and in some cases fall within the province of the arts and crafts. Properties of bodies which, though really inseparable, are for scientific purposes treated as separable, i.e. as not bound up with the particular bodies to which they belong, fall under mathematics, while, if they are regarded as wholly separate from body and from matter, they fall under First Philosophy or metaphysics.

To return from this digression. As we were saying, the affections or properties of the soul, in so far as, like anger or fear, they are implicated in matter, are inseparable from the physical matter of the animal, while at the same time, unlike the mathematical properties of bodies, they cannot be abstracted and treated as separable in thought [§ 11].

a 27. διὰ ταῦτα ἤδη, i.e. because the emotions are "implicit in matter," because they imply bodily movement, or at least modification (*ἀλλοίωσις*) of a faculty of an animal. No sooner is this recognised than an inference can at once (*ἤδη*) be drawn. On this idiomatic use of *ἤδη* see Cope on *Rhetoric* I. 1, 1354 b 7.

a 28. φυσικοῦ. Cf. *Metaph.* 1026 a 5 *διότι καὶ περὶ ψυχῆς ἐνίας θεωρῆσαι τοῦ φυσικοῦ, ὅση μὴ ἄνευ τῆς ὕλης ἐστίν*, *De Part. An.* I. 1. 641 a 14—32 and the remarkably clear discussion 641 a 32—b 10 of the *ἀπορία πότερον περὶ πάσης ψυχῆς τῆς φυσικῆς ἐστὶ τὸ εἰπεῖν ἢ περί τινος*, terminating in the conclusion 641 b 8 *δῆλον οὖν ὡς οὐ περὶ πάσης ψυχῆς λεκτέον· οὐδὲ γὰρ πᾶσα ψυχὴ φύσις, ἀλλά τι μόριον αὐτῆς ἓν ἢ καὶ πλείω.* Cf. *De Sensu* 1. 436 a 17—b 6, *De Juvent.* 27 (*De Resp.* 21), 480 b 23 sqq., *Phys.* VIII. 3, 253 a 32—b 9.

a 28. ἢ τῆς τοιαύτης, int. *ἧς τὰ πάθη λόγοι ἔνυλοί εἰσιν*, i.e. soul as the *form* of an animate body, leaving undecided for the present the question as to whether there is any faculty of soul independent of body. But the treatment of *νοῦς* in III., cc. 4—8 belongs rather to First Philosophy than to physics, if we accept the conclusion of *De Part. An.* 641 b 8 just cited.

a 29. φυσικός. To be understood in a narrower and less accurate sense than in the preceding line, a 28; the "physicist" popularly so called concerning himself with the matter only to the neglect of the form. Against this limitation of the sphere of φυσική A. protests forcibly (e.g. *Phys.* II., *De Part. An.* I.): compare the question below (b 7) τίς οὖν ὁ φυσικὸς τούτων, and the answer (b 8) ἢ μᾶλλον ὁ ἐξ ἀμφοῖν. **διαλεκτικός.** See note on 403 a 2 διαλεκτικῶς *supra.* As here διαλεκτικός is opposed to φυσικός, so elsewhere λογικῶς is opposed to φυσικῶς [see Zeller, *Aristotle* &c., Eng. Tr. I. 174 *n.* 2]. The definition of the physicist will be scientific; that cited above from the *Rhetoric* is dialectical, for rhetoric and practical philosophy generally, owing to the nature of their subject-matter (viz. what is contingent and only generally, not universally true), are content with something less than the accuracy (ἀκρίβεια) of theoretical science. Maier, l.c. II. b, p. 61, remarks that, by this contrast, we are reminded of Plato's διαλεκτικός, who is the true philosopher.

a 31 ζέσιν...32 θερμοῦ. This piece of old-world lore survives in the phrase "to make one's blood boil." Cf. *De Part. An.* II. 4. 650 b 35 θερμότητος γὰρ ποιητικὸν ὁ θυμός, τὰ δὲ στερεὰ θερμανθέντα μᾶλλον θερμαίνει τῶν ὑγρῶν· αἱ δ' ἶνες [fibrine] στερεὸν καὶ γεῶδες, ὥστε γίνονται οἷον πυρίαι ἐν τῷ αἵματι καὶ ζέσιν ποιοῦσιν ἐν τοῖς θυμοῖς. In other words, what is meant is a corporeal expansion due to the ζέσις of the blood implied by the idea of "bursting with rage," which finds its external sign in the swelling of the veins. Cf. a 22 ὀργᾷ τὸ σῶμα, *note.* Fear, on the contrary, chills the blood, l.c. 650 b 27 sq., *ib.* III. 4, 667 a 13—19, IV. 5, 679 a 25. Both ζέσις and κατάψυξις, being ἀλλοιώσεις or qualitative changes, fall under the κίνησις of 403 a 26.

403 b 2. τὸ εἶδος καὶ τὸν λόγον. The καὶ is explicative, as is obvious from the next clause. Cf. *Phys.* IV. 1, 209 a 21 εἶδος καὶ λόγος τῶν πραγμάτων, *Metaph.* 1044 b 12 τὸ δ' ὡς εἶδος (sc. αἴτιον) ὁ λόγος, ἀλλ' ἄδηλος, ἐὰν μὴ μετὰ τῆς αἰτίας ᾖ ὁ λόγος, 996 b 8 τὸ δ' εἶδος ὁ λόγος, *Phys.* I. 7. 190 a 16 τὸ γὰρ εἴδει λέγω καὶ λόγῳ [sc. ἓν] ταὐτόν. The analysis of the concrete particular is sometimes into matter, ὕλη, and form, **εἶδος** καὶ μορφή, sometimes into matter, ὕλη, and notion, **λόγος** καὶ μορφή: compare 412 a 8 with *Metaph.* 1042 a 28 sq., also 1058 b 10 ὁ δὲ Καλλίας ἐστὶν ὁ λόγος μετὰ τῆς ὕλης.

b 2. ὁ μὲν γὰρ λόγος εἶδος τοῦ πράγματος. The text is uncertain. So far from agreeing with Trend. "εἶδος...et facilius est et rei aptius," I suspect the word (1) because of its inadequate authority, two inferior MSS. U and X, (2) because, even if εἶδος had the strongest evidence, the sentence would still be a truism, which there seems no sufficient reason for repeating when it has just been assumed in the preceding sentence. The great majority of our MSS. read ὅδε or ὁ δέ, and this is confirmed by Simpl. and Philop. Obviously the uncial ΟΔΕ is the common source, and this might be read ὅδε, as W. and possibly Them., or *divisim* ὁ δέ, as Simpl. Plutarchus Atheniensis apud Simpl. and Philop. took it to be. Simpl. 21, 35 οὐκ ὡς ὁ φιλόσοφος ἐξηγεῖται Πλούταρχος, ἀντιδιαιρῶν τὸν λόγον πρὸς τὸν τοῦ πράγματος, ἀλλ' εἰπὼν τὴν **ὄρεξιν τῆς ἀντιλυπήσεως** εἶδος εἶναι καὶ λόγον, **τὸν δὲ λόγον τοῦ πράγματος** εἶναί φησι, τουτέστι τὸ εἶδος, καθ' ὃ εἰδοποιεῖται ἡ ὀργή. ἐπεὶ δὲ σύνθετος ἡ ὀργή, ἀνάγκη καὶ τὸν λόγον καὶ τὸ εἶδος ἐν ὕλῃ ὁρᾶν, εἰ ἔσται, ἐπειδὴ τὸ εἶναι αὐτῷ οὐκ ἄνευ ὕλης. It appears to me that Simpl. represents our sentence by the words **τὸν δὲ λόγον τοῦ πράγματος** εἶναί φησι. If we turn this back from oblique to direct we get the text of Simpl., viz. ὁ δὲ λόγος τοῦ πράγματος. That Simpl. did not read εἶδος is clear from his introduction of the word after τουτέστι. It would seem, then, that Plutarch, like Philoponus, explained "The one definition is the form, the other belongs to the thing," i.e. not to the form, for Plutarch made the two clauses stand opposed. Simpl.,

having precisely the same reading, explained rather differently, "The one definition is the form and the form belongs to the thing," i.e. implies the σύνολον of which it is the form. Philop. 59, 15 ὑποστικτέον εἰς τε τὸν γὰρ σύνδεσμον καὶ εἰς τὸν δέ, ἵνα ᾖ οὕτως· ὁ μὲν γὰρ τῶν ὁρισμῶν ὁ λόγος ἐστὶ καὶ ἡ αἰτία ἤτοι τὸ εἶδος τοῦ θύμου, ὁ δ' ἕτερος τοῦ πράγματός ἐστιν ὁρισμός, τουτέστι τῆς οὐσίας καὶ τῆς ὕλης. That is, Philop. would punctuate ὁ μὲν γάρ, λόγος· ὁ δέ, τοῦ πράγματος. He did not read εἶδος. The evidence of Them., it is true, is indecisive: (7, 32 H., 13, 18 Sp.) ὁ μὲν γὰρ λόγος τῆς ὀργῆς ὄρεξις ἀντιλυπήσεως. ἀνάγκη δὲ ἐγγίνεσθαι τοῦτο τὸ εἶδος ἐν ὕλῃ τοιᾷδε· ὥσπερ οἰκίας ὁ μὲν τὸ εἶδος καὶ τοῦ εἴδους τὸν λόγον ἀποδίδωσιν, κτέ. Them. means "for the notion of anger is a desire of retaliation, but this form must be manifested in matter of a certain kind." This does not prove that he had εἶδος in the first clause, and in the second he may have simply substituted τοῦτο τὸ εἶδος for A.'s τοῦτον [sc. τὸν λόγον], as he was quite justified in doing, for A. has in the preceding sentence (b 2) τὸ εἶδος καὶ τὸν λόγον. Whence did Them. get ὄρεξις ἀντιλυπήσεως in his first clause? Possibly from εἶδος (cf. b 2), but more probably from ὅδε. No weight can be attached to Sophonias 8, 35 εἰ γὰρ ἀνάγκη τὸν λόγον τόνδε τοῦ πράγματος ἐν ὕλῃ τοιᾷδε εἶναι, for his τόνδε may replace (b 3) τοῦτον. There is no proof that he read εἶδος. If ὅδε is right, A. means "for this (viz. desire of retaliation) is the notion of the thing," i.e. of anger, ὅδε being attracted to the gender of λόγος. This gives a satisfactory sense and avoids tautology. If we accept εἶδος, the lectio facilior, the question arises, why should A. reiterate the identity of λόγος and εἶδος which he had assumed already (403 a 25 λόγοι ἔνυλοι, b 2 τὸ εἶδος καὶ τὸν λόγον)? A. may have done so, being on occasion as pleonastic as he is elsewhere elliptical, but, if so, the text of all the Greek commentators was faulty in this place. Did A. write simply ὁ μὲν γὰρ λόγος τοῦ πράγματος (ὁ μὲν subject, λόγος predicate, the masculine pronoun again by attraction), and are ὅδε and εἶδος two divergent supplements to fill a non-existent gap?

b 3. **τοιᾳδί**, of a definite sort (not τῇ τυχούσῃ), i.e. the appropriate matter, cf. 412 b 11, 414 a 26 ἐν...τῇ οἰκείᾳ ὕλῃ. **εἰ ἔσται**, if it is to exist at all. A. uses ἔσται, not γενήσεται, the form being eternal: *Metaph.* 1044 b 21 ἐπεὶ δ' ἔνια ἄνευ γενέσεως καὶ φθορᾶς ἔστι καὶ οὐκ ἔστιν, οἷον...καὶ ὅλως τὰ εἴδη καὶ αἱ μορφαί, cf. 1039 b 26. But A. is not always consistent and freely uses ἐγγίγνεσθαι, ἐπιγίγνεσθαι or simply γίγνεσθαι (e.g. *Metaph.* 1035 a 5) of his immanent form. **οἰκίας.** House, like anger, admits of three definitions. The first, σκέπασμα κωλυτικὸν φθορᾶς κτέ., is the definition κατὰ τὸν λόγον μόνον, corresponding to ἀγγεῖον σκεπαστικὸν κτέ. of *Metaph.* 1043 a 16. It answers to ὄρεξις ἀντιλυπήσεως in the case of anger. The second, mentioning only the materials (stones, bricks and timber), answers to the ζέσις τοῦ περὶ καρδίαν αἵματος of 403 a 31; while the third, only indicated in outline, is the one which A. accepts and to which he refers in b 8 ὁ ἐξ ἀμφοῖν [sc. ὁριζόμενος], cf. *Metaph.* 1043 a 14—19. The four causes of a house are specified *Metaph.* 996 b 6—8. For οἰκοδομική as (*a*) the form, cf. 1070 b 33; as (*b*) the efficient cause (τὸ κινοῦν) 1070 b 29, *Phys.* II. 4, 196 b 26.

b 6. **ἕτερος δ'**, int. φήσει.

b 6. **ἐν τούτοις τὸ εἶδος ἕνεκα τωνδί**, will give as definition the form residing in these, viz. in the materials aforesaid. The third definition takes account not only of the matter, ἐν τούτοις, but of the form as well. It goes on to mention the "final cause" ἕνεκα τωνδί "with a view to this or that end," i.e. protection from the weather. Them. 7, 36 H., 13, 24 Sp. ἕτερος δ' ἄμφω συλλαβών, ὅτι σκέπασμα τοιονδὶ ἐξ ὕλης τοιᾶσδε, Simpl. 22, 7 ἐν ξύλοις δηλαδὴ καὶ λίθοις

καὶ πλίνθοις τὸ εἶδος, τουτέστι τὸ σκέπασμα, προσθεὶς καὶ τὸ τέλος, ἐπειδὴ ἐν τοῖς τεχνητοῖς διώρισται τὸ οὗ ἕνεκα ἐκ τοῦ εἴδους. Biehl's omission of the comma after εἶδος is confirmed by this remark of Simplicius. The construction ἐν τούτοις τὸ εἶδος in A.'s Greek hardly presents any difficulty. It differs from e.g. 429 b 14 τόδε ἐν τῷδε only in being object to φήσει instead of subject to (unexpressed) ἐστί. 'Εν τῷδε there must be an attribute as well as ἐν τούτοις here. Compare the prepositional phrases with περὶ cited in *note* on 402 a 8 **περὶ αὐτήν**.

b 7. **ὁ φυσικός**. Which of these three definitions is truly scientific as belonging to φυσική and therefore to be employed by the physicist? τούτων denotes those who define, as in b 1 (like ὁ μὲν...ὁ δὲ...ἕτερος). The man who studies the concrete realities of the natural universe, natural bodies, sensible substances, things concrete of form and matter, is ὁ φυσικός. His γένος comprises τὰ ἔχοντα ἐν ἑαυτοῖς ἀρχὴν κινήσεως. In his treatment of them he will ignore neither the formal nor the material cause. The point is frequently urged by A., e.g. *Phys.* II. 2, 194 a 12—27, 194 b 9 sqq., II. 7, 198 a 22 ἐπεὶ δ' αἱ αἰτίαι τέτταρες, περὶ πασῶν τοῦ φυσικοῦ εἰδέναι, καὶ εἰς πάσας ἀνάγων τὸ διὰ τί ἀποδώσει φυσικῶς, τὴν ὕλην, τὸ εἶδος, τὸ κινῆσαν, τὸ οὗ ἕνεκα. ἔρχεται δὲ τὰ τρία εἰς ἓν πολλάκις· τὸ μὲν γὰρ τί ἐστι καὶ τὸ οὗ ἕνεκα ἕν ἐστι, τὸ δ' ὅθεν ἡ κίνησις πρῶτον τῷ εἴδει ταὐτὸ τούτοις. This last remark explains why here in *De A.* and in *Phys.* II. 2, l.c., A. confines himself to insisting upon attention to the form as well as the matter. *Metaph.* 1037 a 14 ἐπεὶ τρόπον τινὰ τῆς φυσικῆς καὶ δευτέρας φιλοσοφίας ἔργον ἡ περὶ τὰς αἰσθητὰς οὐσίας θεωρία· οὐ γὰρ μόνον περὶ τῆς ὕλης δεῖ γνωρίζειν τὸν φυσικόν, ἀλλὰ καὶ τῆς κατὰ τὸν λόγον, καὶ μᾶλλον. Or again, he may adopt a threefold division, *Phys.* II. 7, 198 a 31 ὥστε τὸ διὰ τί καὶ εἰς τὴν ὕλην ἀνάγοντι ἀποδίδοται, καὶ εἰς τὸ τί ἐστι, καὶ εἰς τὸ πρῶτον κινῆσαν. περὶ γενέσεως γὰρ μάλιστα τοῦτον τὸν τρόπον τὰς αἰτίας σκοποῦσι, τί μετὰ τί γίνεται, καὶ τί πρῶτον ἐποίησεν ἢ τί ἔπαθε, καὶ οὕτως ἀεὶ τὸ ἐφεξῆς. In *Phys.* II. 9, 200 a 30—b 4 A. returns to the twofold division of end and necessary condition, the former taking the place of form, the latter being identical with matter. This is also his standpoint in *De Part. An.* I. 1.

b 8. **ἢ μᾶλλον**. Here as often ἢ introduces the writer's answer to his own question, i.e. the solution of the problem which he tentatively proposes. This solution, however, frequently expresses the full strength of his conviction, so that the apparent modesty of the suggestion becomes a mere trick of style, like ἴσως which, e.g. 402 a 23, under the veil of "perhaps" implies "beyond all doubt." Similarly ἢ thus used ceases to be interrogative ("or shall we rather say?") and tends to become frankly affirmative. *Ind. Ar.* 312 b 57 quoniam ἢ solennis est particula in altero membro interrogationum disiunctivarum idque alterum membrum plerumque ad affirmationem vergit, inde factum esse videtur, ut saepissime, ubi ἢ usurpatur non antecedente priore interrogationis membro a πότερον exordiendo, interrogationis natura fere delitescat eaque enunciatio respondentis potius et modeste affirmantis, quam quaerentis esse videatur. itaque exposita aliqua ἀπορίᾳ eius λύσις per particulam ἢ induci solet. This usage is stereotyped in the treatise entitled from its contents *Problems*, where διὰ τί introducing the problem is regularly followed by ἢ ὅτι introducing the solution. Cf. also *Pol.* 1338 b 1 where, as Mr Newman says, instead of ἢ μᾶλλον modeste affirmantis we expect ἀλλὰ or ἀλλὰ μᾶλλον (but ἀλλά has preceded).

b 8. **ὁ ἐξ ἀμφοῖν** = ὁ ἄμφω ταῦτα τῷ ὅρῳ συντιθείς. Cf. *Phys.* I. 3, 186 b 34 καὶ καθ' οὗ ἄμφω, καὶ ἑκάτερον καὶ τὸ ἐκ τούτων λεγέσθω, *Metaph.* 1043 a 18 οἱ δ' ἄμφω ταῦτα συντιθέντες τὴν τρίτην καὶ τὴν ἐκ τούτων οὐσίαν [sc. λέγουσιν]. One might be tempted to think that the subject to be supplied was ὅρος, which is grammatically impossible if we consider b 7 τούτων (cf. b 1), b 8 ἀγνοῶν, to

say nothing of b 7, 8, 9 ὁ περὶ κτέ. compared with b 13 τεχνίτης, 15 ὁ μαθηματικός, 16 ὁ πρῶτος φιλόσοφος. It is, however, the definitions and not their authors that are really under comparison, and Simplicius is therefore justified in explaining the meaning thus, 22, 9 διακρίνας δὴ τοὺς ὅρους ζητεῖ λοιπόν, τίς ἐκ τούτων ὁ φυσικός, καὶ ἐγκρίνει εἶναι τὸν ἐξ ἀμφοῖν. For the carelessness of expression cf. Cic. *De Fin.* II. § 44 Cum Epicuro autem hoc plus est negotii, quod e duplici genere voluptatis coniunctus est, i.e. Epicurus defines the *summum bonum* so as to include under it two kinds of pleasure; what Cicero says is, "Epicurus is a compound of two kinds of pleasure." It is just possible that if A. had taken the trouble to complete the sentence it would have run ὁ ἐξ ἀμφοῖν τὴν οἰκίαν ὡς συνεστῶσαν ὁριζόμενος: but with his love of brevity and *ad sensum* construction ὧν is the more natural supplement.

b 9. ἐκείνων δέ, the other two, the proposers of the imperfect definitions which give (1) the form without the matter, (2) the matter without the form. Is there a branch of science or of enquiry to which one or other of these imperfect definitions is appropriate? In other words, what science, if any, treats of either (1) the form of concrete things, neglecting the matter, or (2) the matter, neglecting the form? There seems no direct answer, unless we suppose that, question (1) being dropped, (2) is answered in the clause b 9 ἢ οὐκ ἔστι... ᾗ χωριστά, a view which Philop. favours, 60, 28—31. We have instead, b 10—16, four branches of enquiry distinguished. The first three, viz. physics, the productive arts and sciences, mathematics, when they define, certainly include both λόγος and ὕλη in the definition. But not all in the same way, and the difference in the mode is referred to the different degrees in which "the things are separable from the matter," cf. 429 b 21 sq. With 403 b 7—16 it is instructive to compare 429 b 10—22, 431 b 12—19. **ἢ οὐκ ἔστι.** See on b 8 ἢ μᾶλλον.

b 10. τὰ πάθη...ᾗ χωριστά, the inseparable properties of matter which are not even regarded for purposes of study as separable: secondary matter is meant, ἐσχάτη ὕλη, iam formata materia, like the stones, bricks and mortar of b 5: ὕλη is used in the same sense throughout the discussion of γένεσις in *Metaph.* Z., cc. 7—9. Legebatur 10 τὰ μὴ χωριστά, μηδ' ᾗ χωριστά, et recte Trend. observavit requiri potius τὰ μὴ χωριστά, ᾗ τε μὴ χωριστά. At non hoc voluit Aristoteles. Deletâ virgulâ et grammatica ratio constat et philosophica. Dicit enim hoc: οὐκ ἔστι τις ὁ περὶ τὰ πάθη τῆς ὕλης ἀχωριστὰ ὄντα μηδ' ᾗ χωριστὰ τὴν ἐπίσκεψιν ποιούμενος, 'ne ita quidem quatenus separabiles sunt,' hoc est quatenus generales sunt: genus enim a rebus singulis χωρίζεται vel quod nos dicimus abstrahitur (Torst.). (Bonitz however, *Ind. Ar.* 539 a 38, classes this with other passages where οὐ or μὴ prefixed to a whole sentence negatives one particular word in it: he explains μηδ' ᾗ χωριστὰ by καὶ ᾗ μὴ χωριστά.) Some generalisation there must be in any science, and b 11 τοιουδί, τοιαύτης imply as much. Cf. *Metaph.* 1033 b 22 ἀλλὰ τὸ τοιόνδε σημαίνει, τόδε δὲ καὶ ὡρισμένον οὐκ ἔστιν, 981 a 10 τοιοῖσδε κατ' εἶδος ἓν ἀφορισθεῖσι, 1060 b 20 τῶν καθόλου καὶ τοῦ τοιουδὶ dist. τόδε τι καὶ χωριστόν. The force of the limiting ᾗ with a negative prefixed can be easily understood from the following parallels, all from *Metaph.* M. 3: 1078 a 14 οὐδετέρα γὰρ ᾗ ὄψις ἢ ᾗ φωνὴ θεωρεῖ, a 26 οὐθ' ᾗ ἄνθρωπος οὐθ' ᾗ ἀδιαίρετος, ἀλλ' ᾗ στερεόν, a 2 εἰ συμβέβηκεν αἰσθητὰ εἶναι ὧν ἐστί [int. ἡ γεωμετρία], μή ἐστι δ' ᾗ αἰσθητά, "if the attribute of being perceptible by sense belongs to the objects with which geometry deals, but geometry does not deal with them *quâ* perceptible by sense," 1077 b 22 μὴ ᾗ δὲ αἰσθητά, ἀλλ' ᾗ τοιαδί, b 28 οὐχ ᾗ κινούμενα, ἀλλ' ᾗ σώματα μόνον, b 19 οὐχ ᾗ δὲ τοιαῦτα. Cf. also 1036 a 11 νοητὴ δὲ [ὕλη] ἡ ἐν τοῖς αἰσθητοῖς ὑπάρχουσα μὴ ᾗ αἰσθητά.

b 10. ἀλλ' ὁ φυσικός. The relation of the clause beginning thus to the

preceding is, I think, misunderstood by Them. (8, 4—6 H., 14, 4—6 Sp.), Simpl. (22, 27—29), Trend. (p. 174), who interpret as if A.'s meaning were "no one, *except the physicist*, treats of the inseparable properties belonging to natural bodies and to sensible matter and treats them as inseparable: quae a materia separari non possunt (τὰ μὴ χωριστά, *Metaph.* 1026 a 19, 25 sqq.) ea sunt ipsa illa, quae physicus, qui qualis sit qualis corporis natura inquirit, exploranda sumit (Trend.). But Torstrik has shown a better way of taking the words τὰ μὴ χωριστὰ μηδ' ᾗ χωριστά: see last note. According to him, the physicist is excluded from this clause because, though dealing with τὰ μὴ χωριστά, he treats of them ᾗ χωριστὰ when he generalises about them.

b 11. τοῦ τοιουδὶ σώματος καὶ τῆς τοιαύτης ὕλης. Of a body of the given kind and of the matter implied therein. Physics treats of bodies regarded as in motion or capable of motion: in order that they may be in this sense φυσικὰ σώματα they must have a certain kind of matter, viz. the matter conditioned by this requirement. Cf. *Metaph.* 1077 b 22—24, 30—32; *Phys.* II. 2, 193 b 35—194 a 15, 194 b 7—9, 9—13. It is owing to the contingent character of their matter that, strictly speaking, neither definition nor demonstration is applicable to particular physical substances: *Metaph.* 1039 b 27—31, 1036 a 2—9. The terms φυσικὸν σῶμα, φυσικὴ ὕλη (412 a 12, 403 b 17) convey no information, when the province of physics is what we are defining. All natural bodies can be described by such attributes as κινητόν, αἰσθητόν, ὑλικόν (cf. Bonitz ad *Metaph.* 1026 a 3). If any single adjective could replace τοιαύτης it would be κινητῆς. Cf. *Metaph.* 1069 a 36 sq., 1036 a 10, 1026 a 12, 1026 a 2 sq. It must be wider than γεννητῆς καὶ φθαρτῆς, *Metaph.* 1042 b 5 sq., cf. 1069 b 25 sq. All natural bodies are self-moved or have in them an inherent principle of motion and rest (*De A.* 412 b 16 sq., *Metaph.* 1025 b 20 sq.); this serves to distinguish them from the products of art. From the objects of mathematics, again, they can be distinguished, in that, whereas the latter, e.g. the circle or the line, can be defined apart from the particular matter in which they are found, natural bodies are concrete of form and matter and incapable of definition apart from the particular matter belonging to them. A.'s favourite phrase for such a concrete thing is τόδε ἐν τῷδε, the particular form residing in particular matter, cf. 429 b 13 ἡ γὰρ σὰρξ οὐκ ἄνευ τῆς ὕλης, ἀλλ' ὥσπερ τὸ σιμόν, τόδε ἐν τῷδε. The matter as well as the form of flesh is relatively determinate. τὸ σιμὸν is not τὸ κοῖλον wherever found, but only ἐν ῥινί. The subject-matter of physics is less capable of independent existence than the subject-matter of mathematics, *Phys.* II. 2, 193 b 36 sq. τὰ γὰρ φυσικὰ χωρίζουσιν ἧττον ὄντα χωριστὰ τῶν μαθηματικῶν, as may be seen if we attempt to define either the subject-matter or its attributes in physics and in mathematics respectively. For the several mathematical objects will be defined as incapable of motion (i.e. change, ἔσται ἄνευ κινήσεως [i.e. ἀκίνητα]), but not so the objects of physics, 194 a 5 σὰρξ δὲ καὶ ὀστοῦν καὶ ἄνθρωπος οὐκέτι, ἀλλὰ ταῦτα ὥσπερ ῥὶς σιμὴ ἀλλ' οὐχ ὡς τὸ καμπύλον λέγεται. They are concrete things, like flesh and bone and man, and imply a particular matter as σιμότης implies ῥίς. This is very clearly explained *Metaph.* 1025 b 28—1026 a 7: I will merely cite b 34 εἰ δὴ πάντα τὰ φυσικὰ ὁμοίως τῷ σιμῷ λέγονται, οἷον ῥίς, ὀφθαλμός, πρόσωπον, σάρξ, ὀστοῦν, ὅλως ζῷον, φύλλον, ῥίζα, φλοιός, ὅλως φυτόν, where the sentence beginning εἰ δὴ expresses the writer's own conviction. The fullest explanation of concrete things as τὰ οὐχ ἁπλᾶ ἀλλὰ συνδεδυασμένα is to be found *Metaph.* 1030 b 14—1031 a 14, 1032 a 20 ἅπαντα δὲ τὰ γιγνόμενα ἢ φύσει ἢ τέχνῃ ἔχει ὕλην· δυνατὸν γὰρ καὶ εἶναι καὶ μὴ εἶναι ἕκαστον αὐτῶν, τοῦτο δ' ἐστὶν ἡ ἑκάστῳ ὕλη. καθόλου δὲ καὶ ἐξ οὗ φύσις καὶ καθ' ὃ φύσις· τὸ γὰρ γιγνόμενον ἔχει φύσιν, οἷον φυτὸν ἢ

say nothing of b 7, 8, 9 ὁ περὶ κτέ. compared with b 13 τεχνίτης, 15 ὁ μαθηματικός, 16 ὁ πρῶτος φιλόσοφος. It is, however, the definitions and not their authors that are really under comparison, and Simplicius is therefore justified in explaining the meaning thus, 22, 9 διακρίνας δὴ τοὺς ὅρους ζητεῖ λοιπόν, τίς ἐκ τούτων ὁ φυσικός, καὶ ἐγκρίνει εἶναι τὸν ἐξ ἀμφοῖν. For the carelessness of expression cf. Cic. *De Fin.* II. § 44 Cum Epicuro autem hoc plus est negotii, quod e duplici genere voluptatis coniunctus est, i.e. Epicurus defines the *summum bonum* so as to include under it two kinds of pleasure; what Cicero says is, "Epicurus is a compound of two kinds of pleasure." It is just possible that if A. had taken the trouble to complete the sentence it would have run ὁ ἐξ ἀμφοῖν τὴν οἰκίαν ὡς συνεστῶσαν ὁριζόμενος: but with his love of brevity and *ad sensum* construction ὢν is the more natural supplement.

b 9. ἐκείνων δέ, the other two, the proposers of the imperfect definitions which give (1) the form without the matter, (2) the matter without the form. Is there a branch of science or of enquiry to which one or other of these imperfect definitions is appropriate? In other words, what science, if any, treats of either (1) the form of concrete things, neglecting the matter, or (2) the matter, neglecting the form? There seems no direct answer, unless we suppose that, question (1) being dropped, (2) is answered in the clause b 9 ἢ οὐκ ἔστι... ᾗ χωριστά, a view which Philop. favours, 60, 28—31. We have instead, b 10—16, four branches of enquiry distinguished. The first three, viz. physics, the productive arts and sciences, mathematics, when they define, certainly include both λόγος and ὕλη in the definition. But not all in the same way, and the difference in the mode is referred to the different degrees in which "the things are separable from the matter," cf. 429 b 21 sq. With 403 b 7—16 it is instructive to compare 429 b 10—22, 431 b 12—19. **ἢ οὐκ ἔστι.** See on b 8 ἢ μᾶλλον.

b 10. τὰ πάθη...ᾗ χωριστά, the inseparable properties of matter which are not even regarded for purposes of study as separable: secondary matter is meant, ἐσχάτη ὕλη, iam formata materia, like the stones, bricks and mortar of b 5: ὕλη is used in the same sense throughout the discussion of γένεσις in *Metaph.* Z, cc. 7—9. Legebatur 10 τὰ μὴ χωριστά, μηδ' ᾗ χωριστά, et recte Trend. observavit requiri potius τὰ μὴ χωριστά, ᾗ τε μὴ χωριστά. At non hoc voluit Aristoteles. Deletâ virgulâ et grammatica ratio constat et philosophica. Dicit enim hoc: οὐκ ἔστι τις ὁ περὶ τὰ πάθη τῆς ὕλης ἀχώριστα ὄντα μηδ' ᾗ χωριστὰ τὴν ἐπίσκεψιν ποιούμενος 'ne ita quidem quatenus separabiles sunt,' hoc est quatenus generales sunt: genus enim a rebus singulis χωρίζεται vel quod nos dicimus abstrahitur (Torst.). (Bonitz however, *Ind. Ar.* 530 a 38, classes this with other passages where οὐ or μή prefixed to a whole sentence negatives one particular word in it: he explains μηδ' ᾗ χωριστά by καὶ ᾗ μὴ χωριστά.) Some generalisation there must be in any science, and b 11 τοιουδί, τοιούτου imply as much. Cf. *Metaph.* 1033 b 22 ἀλλὰ τὸ τοιόνδε σημαίνει, τόδε δὲ καὶ ὡρισμένον οὐκ ἔστιν, 1081 a 10 τοιόνδε κατ' εἶδος ἐν ἀδιαφόροις, 1060 b 20 τῶν καθόλου καὶ τοῦ τοιουδί dist. τόδε τι καὶ χωριστόν. The force of the limiting ᾗ with a negative prefixed can be easily understood from the following parallels, all from *Metaph.* M 3. 1078 a 14 οὐδετέρα γὰρ ᾗ ὁρατὸς ἢ ᾗ φωνὴ θεωρεῖ, a 26 οὐδ' ᾗ ἄνθρωπος οὐδ' ᾗ ἀδιαίρετος, ἀλλ' ᾗ στερεόν. a 2 εἰ συμβέβηκεν αἰσθητὰ εἶναι ὧν ἐστὶν ἡ γεωμετρία, μὴ ἔστι δ' ᾗ αἰσθητά, "if the attribute of being perceptible by sense belongs to the objects with which geometry deals, but geometry does not deal with them *qua* perceptible by sense." 1077 b 22 μὴ ᾗ δὲ αἰσθητά, ἀλλ' ᾗ τοιαδί. b 28 οὐχ ᾗ κινούμενα, ἀλλ' ᾗ σώματα μόνον. b 30 οὐχ ᾗ δὲ τοιαῦτα. Cf. also 1036 a 11 νοητὴ δὲ (ὕλη) ἡ ἐν τοῖς αἰσθητοῖς ὑπάρχουσα μὴ ᾗ αἰσθητά.

b 10. ἀλλ' ὁ φυσικός. The relation of the clause beginning thus to the

preceding is, I think, misunderstood by Them. (8, 4—6 H., 14, 4—6 Sp.), Simpl. (22, 27—29), Trend. (p. 174), who interpret as if A.'s meaning were "no one, *except the physicist*, treats of the inseparable properties belonging to natural bodies and to sensible matter and treats them as inseparable: quae a materia separari non possunt (τὰ μὴ χωριστά, *Metaph.* 1026 a 19, 25 sqq.) ea sunt ipsa illa, quae physicus, qui qualis sit qualis corporis natura inquirit, exploranda sumit (Trend.). But Torstrik has shown a better way of taking the words τὰ μὴ χωριστὰ μηδ' ᾗ χωριστά: see last note. According to him, the physicist is excluded from this clause because, though dealing with τὰ μὴ χωριστά, he treats of them ᾗ χωριστὰ when he generalises about them.

b 11. τοῦ τοιουδὶ σώματος καὶ τῆς τοιαύτης ὕλης. Of a body of the given kind and of the matter implied therein. Physics treats of bodies regarded as in motion or capable of motion: in order that they may be in this sense φυσικὰ σώματα they must have a certain kind of matter, viz. the matter conditioned by this requirement. Cf. *Metaph.* 1077 b 22—24, 30—32; *Phys.* II. 2, 193 b 35—194 a 15, 194 b 7—9, 9—13. It is owing to the contingent character of their matter that, strictly speaking, neither definition nor demonstration is applicable to particular physical substances: *Metaph.* 1039 b 27—31, 1036 a 2—9. The terms φυσικὸν σῶμα, φυσικὴ ὕλη (412 a 12, 403 b 17) convey no information, when the province of physics is what we are defining. All natural bodies can be described by such attributes as κινητόν, αἰσθητόν, ὑλικόν (cf. Bonitz ad *Metaph.* 1026 a 3). If any single adjective could replace τοιαύτης it would be κινητῆς. Cf. *Metaph.* 1069 a 36 sq., 1036 a 10, 1026 a 12, 1026 a 2 sq. It must be wider than γεννητῆς καὶ φθαρτῆς, *Metaph.* 1042 b 5 sq., cf. 1069 b 25 sq. All natural bodies are self-moved or have in them an inherent principle of motion and rest (*De A.* 412 b 16 sq., *Metaph.* 1025 b 20 sq.); this serves to distinguish them from the products of art. From the objects of mathematics, again, they can be distinguished, in that, whereas the latter, e.g. the circle or the line, can be defined apart from the particular matter in which they are found, natural bodies are concrete of form and matter and incapable of definition apart from the particular matter belonging to them. A.'s favourite phrase for such a concrete thing is τόδε ἐν τῷδε, the particular form residing in particular matter, cf. 429 b 13 ἡ γὰρ σὰρξ οὐκ ἄνευ τῆς ὕλης, ἀλλ' ὥσπερ τὸ σιμόν, τόδε ἐν τῷδε. The matter as well as the form of flesh is relatively determinate. τὸ σιμόν is not τὸ κοῖλον wherever found, but only ἐν ῥινί. The subject-matter of physics is less capable of independent existence than the subject-matter of mathematics, *Phys.* II. 2, 193 b 36 sq. τὰ γὰρ φυσικὰ χωρίζουσιν ἧττον ὄντα χωριστὰ τῶν μαθηματικῶν, as may be seen if we attempt to define either the subject-matter or its attributes in physics and in mathematics respectively. For the several mathematical objects will be defined as incapable of motion (i.e. change, ἔσται ἄνευ κινήσεως [i.e. ἀκίνητα]), but not so the objects of physics, 194 a 5 σὰρξ δὲ καὶ ὀστοῦν καὶ ἄνθρωπος οὐκέτι, ἀλλὰ ταῦτα ὥσπερ ῥὶς σιμὴ ἀλλ' οὐχ ὡς τὸ καμπύλον λέγεται. They are concrete things, like flesh and bone and man, and imply a particular matter as σιμότης implies ῥίς. This is very clearly explained *Metaph.* 1025 b 28—1026 a 7: I will merely cite b 34 εἰ δὴ πάντα τὰ φυσικὰ ὁμοίως τῷ σιμῷ λέγονται, οἷον ῥίς, ὀφθαλμός, πρόσωπον, σάρξ, ὀστοῦν, ὅλως ζῷον, φύλλον, ῥίζα, φλοιός, ὅλως φυτόν, where the sentence beginning εἰ δὴ expresses the writer's own conviction. The fullest explanation of concrete things as τὰ οὐχ ἁπλᾶ ἀλλὰ συνδεδυασμένα is to be found *Metaph.* 1030 b 14—1031 a 14, 1032 a 20 ἅπαντα δὲ τὰ γιγνόμενα ἢ φύσει ἢ τέχνῃ ἔχει ὕλην· δυνατὸν γὰρ καὶ εἶναι καὶ μὴ εἶναι ἕκαστον αὐτῶν, τοῦτο δ' ἐστὶν ἡ ἐκάστῳ ὕλη. καθόλου δὲ καὶ ἐξ οὗ φύσις καὶ καθ' ὃ φύσις· τὸ γὰρ γιγνόμενον ἔχει φύσιν, οἷον φυτὸν ἢ

ζῷον· καὶ ὑφ' οὗ, ἡ κατὰ τὸ εἶδος λεγομένη φύσις ἡ ὁμοειδής· αὕτη δ' ἐν ἄλλῳ· ἄνθρωπος γὰρ ἄνθρωπον γεννᾷ. οὕτω μὲν οὖν γίγνεται τὰ γιγνόμενα διὰ τὴν φύσιν, 1034 a 5 *τὸ δ' ἅπαν ἤδη τὸ τοιόνδε εἶδος ἐν ταῖσδε ταῖς σαρξὶ καὶ ὀστοῖς Καλλίας καὶ Σωκράτης· καὶ ἕτερον μὲν διὰ τὴν ὕλην, ἑτέρα γάρ, ταὐτὸ δὲ τῷ εἴδει· ἄτομον γὰρ τὸ εἶδος*. Cf. 1036 b 3 *οἷον τὸ τοῦ ἀνθρώπου εἶδος αἰεὶ ἐν σαρξὶ φαίνεται καὶ ὀστοῖς καὶ τοῖς τοιούτοις μέρεσιν· ἆρ' οὖν καὶ ἐστὶ ταῦτα μέρη τοῦ εἴδους καὶ τοῦ λόγου; ἢ οὔ, ἀλλ' ὕλη, ἀλλὰ διὰ τὸ μὴ καὶ ἐπ' ἄλλων ἐπιγίγνεσθαι ἀδυνατοῦμεν χωρίσαι. ἐπεὶ δὲ τοῦτο δοκεῖ μὲν ἐνδέχεσθαι, ἄδηλον δὲ πότε, ἀποροῦσί τινες ἤδη καὶ ἐπὶ τοῦ κύκλου καὶ τοῦ τριγώνου, ὡς οὐ προσῆκον γραμμαῖς ὁρίζεσθαι καὶ τῷ συνεχεῖ, ἀλλὰ πάντα ταῦτα ὁμοίως λέγεσθαι ὡσανεὶ σάρκες ἢ ὀστᾶ τοῦ ἀνθρώπου καὶ χαλκὸς καὶ λίθος τοῦ ἀνδριάντος*, 1035 a 1 *εἰ οὖν ἐστὶ τὸ μὲν ὕλη τὸ δ' εἶδος τὸ δ' ἐκ τούτων, καὶ οὐσία ἥ τε ὕλη καὶ τὸ εἶδος καὶ τὸ ἐκ τούτων, ἔστι μὲν ὡς καὶ ἡ ὕλη μέρος τινὸς λέγεται, ἔστι δ' ὡς οὔ, ἀλλ' ἐξ ὧν ὁ τοῦ εἴδους λόγος. οἷον τῆς μὲν κοιλότητος οὐκ ἔστι μέρος ἡ σάρξ (αὕτη γὰρ ἡ ὕλη ἐφ' ἧς γίγνεται), τῆς δὲ σιμότητος μέρος* (sc. *ἡ σάρξ*), *ib.* 25—28 *ὅσα μὲν οὖν συνειλημμένα τὸ εἶδος καὶ ἡ ὕλη ἐστίν, οἷον τὸ σιμὸν ἢ ὁ χαλκοῦς κύκλος, ταῦτα μὲν φθείρεται εἰς ταῦτα καὶ μέρος αὐτῶν ἡ ὕλη*, 1036 b 22 *διὸ καὶ τὸ πάντ' ἀνάγειν οὕτω καὶ ἀφαιρεῖν τὴν ὕλην περίεργον· ἔνια γὰρ ἴσως τόδ' ἐν τῷδ' ἐστίν, ἢ ὡδὶ ταδὶ ἔχοντα*, *ib.* 28 *αἰσθητὸν γάρ τι τὸ ζῷον, καὶ ἄνευ κινήσεως οὐκ ἔστιν ὁρίσασθαι, διὸ οὐδ' ἄνευ τῶν μερῶν ἐχόντων πως.*

b 12. **ὅσα δὲ μὴ ᾗ τοιαῦτα**, i.e. *ὅσα δὲ μὴ θεωρεῖται ᾗ τοῦ τοιουδὶ σώματος καὶ τῆς τοιαύτης ὕλης ἔργα καὶ πάθη*. Legebatur [apud Bekkerum et Trend.] *ὁπόσα δὲ μὴ ᾗ τοιαῦτα*: scripsimus *ὅσα δὲ μὴ ᾗ τοιαῦτα*, et *ὅσα* quidem ex codice E, *ᾗ* vero ex Simplicio: (22, 30), *μὴ ᾗ τοιαῦτα, τουτέστι μὴ ᾗ χωριστά*: quae interpretatio, etsi falsa est, de eo quod legerit Simplicius dubitationem non relinquit. Ceterum e scriptura unciali HI modo *ἢ* modo *ᾗ* factum est (Torst.). The text of Simpl., as given by Hayduck, is (22, 30): *ὁπόσα δὲ μὴ ᾗ τοιαῦτα, ἄλλος*] *τουτέστι μὴ ᾗ ἀχώριστα, ἀλλ' ὡς χωριστά, ἄλλος*, but this does not affect Torst.'s argument.

b 13. **περὶ τινῶν μέν.** Philoponus 64, 2 sq. and Sophonias 9, 3 explain **τινῶν** as particulars and Torstrik inclined to the same view, though he was aware that, to make this meaning clear, the article *τῶν* before *τινῶν* is required. There seems no reason why *παθῶν* should not be understood. It is quite true that the physician is concerned with the individual patient (*Metaph.* 981 a 15—24), but it is also true that health and disease are accidents, not essential properties, of a natural body, and the physician studies them solely in order that he may substitute health for disease. Hence in his case *τινῶν* = such as can be produced by *νοῦς*, *τέχνη* or *δύναμις* and not, unless it be *ἀπὸ ταὐτομάτου*, by matter left to itself (*Metaph.* 1032 b 21—26). Similarly with the carpenter, but the properties which he seeks to impart to his materials are even more plainly adventitious and artificial, such as could not have been even spontaneously produced. Cf. *Metaph.* Z., c. 9 throughout, also c. 7, especially 1032 a 32—b 26, Them. 8, 11—17 H., 14, 13—22 Sp. The close connexion between the practical science of medicine and theoretical physics is emphasised *De Sensu* I. 436 a 27—b 1. **τεχνίτης** apparently represents any of the constructive arts and sciences in which human intelligence, imitating nature, works for an end. See note on 406 a 14.

b 14. **τῶν δὲ μὴ χωριστῶν μέν**, sc. *παθῶν*: the genitive being, like b 13 *τινῶν*, governed by *περὶ*: or possibly, the preposition being forgotten, the genitive is simply one of relation. That none of the objects of mathematics have independent existence is fully established *Metaph.* M., cc. 2, 3. Cf. 431 b 15 *τὰ μαθηματικὰ οὐ κεχωρισμένα ὡς κεχωρισμένα νοεῖ.* **ᾗ δὲ μὴ τοιούτου σώματος,** but not considered as properties of the concrete body to which they belong. Before the mathematician can treat of them he must by abstraction separate

them from their concrete surroundings. It matters not whether the sphere be made of brass or of some other material, nor what its size or its position, *Metaph.* 1036 a 31—b 3. Hence the objects of mathematics, e.g. the geometer's circles and spheres, are not sensible but intelligible objects: that is, though they have matter, it is intelligible and not sensible matter, *Metaph.* 1036 a 2—12, 1036 b 32—1037 a 5: νοητὴ ὕλη = ἡ ἐν τοῖς αἰσθητοῖς ὑπάρχουσα μὴ ᾗ αἰσθητά, οἷον τὰ μαθηματικά (1036 a 11), quae, licet sit in rebus sensibilibus, tamen non eatenus in iis est, quatenus sunt sensibiles (Bonitz *ad loc.*), e.g. quantity and extension, ποσὸν and συνεχές. Thus the geometer's circle and sphere cease to be objects of physics, whereas the circle or sphere in brass is a natural body which both physicist and artist study, but under different aspects: and, as with every other such body, its notion or definition must take into account its particular matter, *Metaph.* 1033 a 4 ὁ δὴ χαλκοῦς κύκλος ἔχει ἐν τῷ λόγῳ τὴν ὕλην. Contrast the definition of the sphere given by the geometer 1033 b 14 τὸ ἐκ τοῦ μέσου σχῆμα ἴσον, which ignores sensible matter.

b 15. **ἐξ ἀφαιρέσεως.** *Ind. Ar.* 126 b 16 ἀφαίρεσις 'abstractio logica.' τὰ ἐξ ἀφαιρέσεως λεγόμενα, eae notionis cuiusque partes, quae cogitatione separari possunt (Waitz). Ita praecipue res mathematicae significantur. *De Cael.* III. 1, 299 a 15 τὰ μὲν ἐξ ἀφαιρέσεως λέγεσθαι τὰ μαθηματικά, τὰ δὲ φυσικὰ ἐκ προσθέσεως, *Metaph.* 1061 a 28—b 3. See Bonitz ad *Metaph.* 982 a 27. Cf. *De A.* 429 b 18 sq., 431 b 12 sqq., 432 a 5 sq., where τὰ ἐν ἀφαιρέσει ὄντα (λεγόμενα) are the objects of mathematics. The opposite of ἐξ ἀφαιρέσεως is ἐκ προσθέσεως, *Metaph.* 1077 b 10 ἐκ προσθέσεως γὰρ τῷ λευκῷ ὁ λευκὸς ἄνθρωπος λέγεται, for by determination, through white, arises the concept of "white man." See Bonitz *ad loc.* (p. 533): per τὸ λευκόν, quod additur ad hominem, exsistit homo albus. By ἐξ, "in consequence of," is expressed the process by which the abstract notion is attained: we take away or leave out of account certain marks or attributes and fix attention upon those which remain, e.g. the geometer disregards all sensible properties, weight, hardness, heat, etc. and regards the things with which he is dealing solely as quantities and as continuous (1061 a 32 μόνον καταλείπει τὸ ποσὸν καὶ συνεχές) and investigates solely the properties that belong to them as such (καὶ τὰ πάθη τὰ τούτων ᾗ ποσά ἐστι καὶ συνεχῆ, καὶ καθ' ἕτερόν τι θεωρεῖ).

ᾗ δὲ κεχωρισμένα, so far as they have a separate existence παρὰ τὰ ἕκαστα, παρὰ τὰς αἰσθητὰς οὐσίας. Cf. 431 b 18 τῶν κεχωρισμένων τι. 1026 a 16 ἡ δὲ πρώτη [φιλοσοφία] καὶ περὶ χωριστὰ καὶ ἀκίνητα. Cf. 1026 a 27—30 εἰ μὲν οὖν μή ἐστί τις ἑτέρα οὐσία παρὰ τὰς φύσει συνεστηκυίας ἡ φυσικὴ ἂν εἴη πρώτη ἐπιστήμη. εἰ δ' ἐστί τις οὐσία ἀκίνητος, αὕτη προτέρα καὶ φιλοσοφία πρώτη. In *Metaph.* 996 a 15 κεχωρισμέναι τῶν αἰσθητῶν and ἐνυπάρχουσαι ἐν τούτοις are alternative and mutually exclusive determinations of οὐσίαι as applied to mathematicals. *Metaph.* 1039 a 7 ἡ γὰρ ἐντελέχεια χωρίζει. Hence that of which First Philosophy treats is ἐντελεχείᾳ ὂν or rather ἐντελέχεια (cf. *Metaph.* 1074 a 33 ἀλλ' ὅσα ἀριθμῷ πολλά, ὕλην ἔχει. εἷς γὰρ λόγος καὶ ὁ αὐτὸς πολλῶν...τὸ δὲ τί ἦν εἶναι οὐκ ἔχει ὕλην τὸ πρῶτον· ἐντελέχεια γάρ), whereas of sensible substance we are told 1040 b 5 τῶν δοκουσῶν εἶναι οὐσιῶν αἱ πλεῖσται δυνάμεις εἰσί, τά τε μόρια τῶν ζῴων (οὐδὲν γὰρ κεχωρισμένον αὐτῶν ἐστίν· ὅταν δὲ χωρισθῇ, καὶ τότε ὄντα ὡς ὕλη πάντα, καὶ γῆ καὶ πῦρ καὶ ἀήρ κτέ.). In 1041 a 8 First Philosophy is said to be περὶ ἐκείνης τῆς οὐσίας ἥτις ἐστὶ κεχωρισμένη τῶν αἰσθητῶν οὐσιῶν, i.e. ἡ ἀκίνητος οὐσία of Λ., cc. 6—10, cf. 1069 a 33, 1073 a 22—b 3, also 1041 a 9—11, 27—31.

b 16. **ἐπανιτέον.** Cf. *Eth. Nic.* 1100 a 31 ἀλλ' ἐπανιτέον ἐπὶ τὸ πρότερον ἀπορηθέν. Similarly *Metaph.* 993 a 26 ἐπανέλθωμεν πάλιν, 1038 b 1, *Eth. Nic.* 1097 a 15.

b 16. ὅθεν ὁ λόγος, sc. *μετέβη* probably. The words recur *Metaph.* 1000 b 9. Cf. *Eth. Nic.* 1097 a 24 *μεταβαίνων δὴ ὁ λόγος εἰς ταὐτὸν ἀφῖκται,* 1144 b 25 sq., *Pol.* 1335 a 4 *ὅθεν ἀρχόμενοι δεῦρο μετέβημεν,* 1284 b 35. Similarly Plato *saepe,* e.g. *Crat.* 438 A *ἐπανέλθωμεν δὴ πάλιν ὅθεν δεῦρο μετέβημεν.* The point from which the digression started would seem to be 403 b 9, but it may be the first introduction of *ὁ φυσικός* 403 a 27. At all events A. re-states somewhat more explicitly his proposition 403 a 25 *τὰ πάθη λόγοι ἔνυλοί εἰσιν.*

b 17 τὰ πάθη...18 ζῴων. The verb to be supplied is probably *ὑπάρχει, πάθος εἶναι (τῆς ψυχῆς)* being equivalent to *(τῇ ψυχῇ) ὑπάρχειν.* The precise meaning of *ἀχώριστα* is defined by the clause b 19 *καὶ οὐχ...ἐπίπεδον,* "inseparable and yet not in the same way as line and surface are inseparable": that is, while the affections of the soul are inseparable [belong to it as inseparable] from the animal body, at the same time they do not belong to it as mathematical objects, line and surface, belong to their *ὑποκείμενα* (viz. the sensible things from which, though inseparable in fact, they are abstracted in thought). This qualification is necessary, because above (403 a 12—17) the affections of the soul were, for a special purpose, compared with the straight line as being inseparable from body. The fuller discussion which follows and the digression (403 a 27—b 16) have shown that this is not the whole account of the matter, and that the physicist's treatment of soul differs from the mathematician's treatment of line and surface. By *τῆς φυσικῆς ὕλης τῶν ζῴων* is meant the body of the animal. Cf. 403 a 16 *πάντα εἶναι μετὰ σώματος,* 403 b 3 *ἐν ὕλῃ τοιᾳδί,* b 11 *ἅπανθ' ὅσα τοῦ τοιουδὶ σώματος καὶ τῆς τοιαύτης ὕλης.* It might be glossed by *τῆς αἰσθητῆς ὕλης.* So Them. 8, 33 H., 15, 14 Sp. *ἐλέγομεν δὲ ὅτι τὰ πάθη τ*[illegible] text of *ἀχώριστα τῆς φυσικῆς ὕλης τῶν ζῴων ἐστί, καὶ οὐχ ὥσπερ γραμμὴν καὶ* [illegible]*ουτέστι τῷ λόγῳ δυνατὸν ἀποστῆσαι τῆς ὑποκειμένης ὕλης, οὕτω καὶ θυμὸν καὶ φό*[illegible]ument. *δεῖ τοὺς ὅρους τούτους συμπλέκεσθαι τοῖς παθήμασι τοῦ σώματος,* Simpl. 23,[illegible] *τινῶν* As to the text, I am not satisfied to follow E blindly (see critical note[illegible]aware followed by *καὶ οὐκ* seems very questionable. In *ἀχώριστα* we have the [illegible]uired. sense, even if the precise form of the sentence cannot be recovered. [illegible] true suggestion *οὔτε...οὔτε...καὶ οὐχ* is not very unlike *De Part. An.* IV. 14, 697 b 15— *οὐκ ὢν ὄρνις οὔτε πέταται μετεωριζόμενος, καὶ τὰ πτερὰ οὐ χρήσιμα πρὸ*[illegible]sential

b 18. ᾗ δὴ τοιαῦθ' ὑπάρχει, θυμὸς καὶ φόβος. These words tend [illegible] order the affections of the soul and might perhaps have been introduced im[illegible] as can after b 17 *τῆς ψυχῆς.* The expression is unusually precise and full. [illegible] by *Metaph.* 1078 a 5 *πολλὰ δὲ συμβέβηκε καθ' αὑτὰ τοῖς πράγμασιν ᾗ ἕκαστον ὑπάρχει τῶν τοιούτων, ἐπεὶ καὶ ᾗ θῆλυ τὸ ζῷον καὶ ᾗ ἄρρεν, ἴδια πάθη ἐστίν.* A. is more often content to omit the verb as above 403 a 12 sq., b 10 *ᾗ χωριστά,* b 12 *ᾗ τοιαῦτα* and elsewhere *τὸ ὂν ᾗ ὄν, τὸ ἄπειρον ᾗ ἄπειρον. Pol.* 1275 a 37 *οὐδέν ἐστιν, ᾗ τοιαῦτα, τὸ κοινόν.* For *ᾗ δὴ* Simplicius reads *ᾗ γε* and this is the reading of U, but *δή,* in Eucken's words: vim relativi tantum urguet 'welcher eben,' 'welcher gerade.' Cf. *Eth. Nic.* 1158 a 10 *ἃ δὴ μάλιστ' εἶναι δοκεῖ φιλικά, Metaph.* 1032 a 19, 986 a 13 *ἀλλ' οὐ δὴ χάριν ἐπερχόμεθα,* 1000 b 9 *ἀλλ' ὅθεν δὴ ὁ λόγος, τοῦτό γε φανερόν,* where *δή* and *γε* each have their proper meaning: *Pol.* 1278 b 38, 1295 b 36 sq., with Newman's notes; Eucken *De Part. Usu,* p. 43. *θυμὸς καὶ φόβος* recall the longer list a 17, 18 from which they are taken as typical instances. They stand here exactly as they stood there in apposition to *τὰ πάθη.* Simplicius 23, 24 explains the words thus: *τὰ τοιαῦτα πάθη, θυμὸν λέγω καὶ φόβον καὶ τὰ ὅμοια, ἃ μηδὲ ἐξ ἀφαιρέσεως, ὥσπερ γραμμὴ καὶ ἐπίπεδον, ἐπινοεῖσθαι δύναται ἄνευ τῆς ὕλης, ὡς καθὸ τοιαῦτα συνεφελκόμενα τὴν ὕλην, καὶ οὐχ ὥσπερ τὸ ἐπίπεδον ἄνευ τοῦ χαλκοῦ καὶ ὅλως τοῦ ἀντιτύπου. τὸ μὲν γὰρ*

ἐπίπεδον ὡς τὸ κοῖλον ἔχει ἄνευ ῥινὸς ἐπινοούμενον, ὁ δὲ θυμὸς ὡς τὸ σιμόν· τὸ γὰρ σιμὸν ἡ ἐν ῥινὶ κοιλότης, ὡς ἡ ὀργὴ ὄρεξις ἀντιλυπήσεως ἐν τῇ ζέσει τοῦ περὶ καρδίαν αἵματος.

b 19. καὶ οὐχ...ἐπίπεδον. Has affectiones a corpore separari non posse, ⟨ait A.⟩ nec tamen ut lineam et planum sese habere; quae quidem ubi exstant, materiae adhaerent, sed quarum natura, materia posthabita (ἐξ ἀφαιρέσεως) mente quasi ab oculis revocata, cognoscitur: in illarum affectionum vi et natura corpus in numerum venire (Trend.). The inseparable matter in which his objects are presented to the mathematician is wholly indifferent, whether e.g. the line is drawn in sand, or presented as the edge of a brass ruler. But to the biologist the particular sensible matter is all-important: that of which he treats is analogous to σιμόν not to κοῖλον. Alter the matter, and a hand or an eye in marble or wood ceases to be a hand or eye at all except equivocally (ὁμωνύμως); the ἔργα καὶ πάθη of soul can only be studied in living animals when ἅμα τούτοις πάσχει τι τὸ σῶμα. Mr Shorey neatly sums up as follows (*A. J. Ph.* Vol. XXII. p. 152): "The πάθη, *qua* such; i.e. *qua*, e.g. θυμός and φόβος, are ἀχώριστα, inseparable even in thought from their material embodiment, and not like the line which, *qua* line, is separable in thought from physical matter."

CHAPTER II.

The first chapter has introduced to our notice in a somewhat tentative and summary fashion the problems and the method of psychology as conceived by A. Before going on to his own exposition, he devotes the remainder of the first book to a review and criticism of the received opinions on the subject. Such a critical review forms a part of many Aristotelian treatises, the best known instances being the first book of the *Metaphysics* and the second book of the *Politics*, and is often of the highest value alike for the information given as to the views of other philosophers and for the insight thus afforded into the foundations of his own constructive theory and the interdependence of its parts. In a subject so obscure and difficult as the present it is not to be expected that much can be gathered from the general body of current opinions usually designated ἔνδοξα, to which he frequently appeals in a popular treatise like the *Nicomachean Ethics* (403 b 25 sq., 29 sq., 404 b 17, 28, 405 a 28, b 25, 26 sqq.). Even citations from the poets and remarks of men eminent in other departments of life yield very little (404 a 29 sq., 410 b 27 sq., 411 a 8). The opinions stated and criticised belong almost without exception to the philosophic schools of his predecessors. The great physicists of the fifth century—Democritus, Empedocles, Anaxagoras,—on the one hand, and on the other Platonism as presented in the *Timaeus*, and again as taught by A.'s own fellow-pupil and personal friend Xenocrates in the contemporary Academy, receive the fullest treatment, while the theory of harmony, familiar to us from the pages of the *Phaedo*, a theory which at first sight bears a remarkable likeness to that of the entelechy, is also singled out for discussion and refutation (407 b 27 sqq.). Slight attention is bestowed upon other thinkers: certain Pythagoreans (404 a 18), Thales (405 a 19), Diogenes of Apollonia (405 a 21), Heraclitus (405 a 25), Alcmaeon (405 a 29), Hippon (405 b 2), Kritias (405 b 6): but their contributions are obviously regarded as unimportant by comparison, and even the claim of Alcmaeon, Hippon, and Critias to rank as philosophers is doubtful.

A. makes some attempt to classify the divergent theories before him (403 b 25 sqq., 405 b 11, 409 b 19). Starting with the common opinion that both the motion and the perception of living creatures are due to soul, the various theories may roughly be classified according as they emphasise the one or the other of these functions. In the former case, soul is described as the most mobile of things, as by the Atomists, who identified it with heat, both fire and soul owing their mobility to the small size and spherical shape of their component atoms. If, however, perception and knowledge be taken as the pre-eminent functions of soul, and if it be further admitted that like knows like, it follows that soul is a compound of the elements which go to make the world. Under these two heads (1) the most mobile substance and (2) the primary element or (if there be more than one such) a compound of the primary elements, there is room for a wide diversity of opinions, for the most mobile substance may be taken to be material, e.g. fire, or immaterial, e.g. a self-moving number, whilst both the number and nature of the primary element or elements has been notoriously open to discussion. There is no general agreement whether they are one or many, corporeal or incorporeal. Sometimes the two views are combined. Sometimes the substance declared to be soul would seem to have been selected because of the fineness of its particles, so that, if not indeed actually incorporeal, it would appear such in comparison with grosser matter. Hence we have another head (3) the incorporeal, and virtually incorporeal. As a general rule, there is a close affinity between the views of various philosophers regarding the elements of the universe and the composition of the soul. In this respect, however, Anaxagoras forms a notable exception.

In c. 2 A.'s attitude is for the most part expository, except that in 405 b 19—23 an objection is raised to the theory of Anaxagoras. The fact is that he is in partial sympathy with the views expressed under each of the three main heads under which he arranges his predecessors. He holds that soul is (1) *κινητικόν*, (2) *γνωριστικόν*, and (3) *ἀσώματον*. His quarrel is with the one-sided way in which these various characteristics of soul have been presented and with the inadequacy of all the formulae hitherto devised for their expression. Thus as regards (1) he agrees that soul is *κινητικόν* but denies that it is *κινούμενον* (see c. 3); as regards (2) he combats the inference that, because soul is that which knows, it must therefore be compounded of the elements of the things which it knows (see 409 b 19 sqq.). Similarly the theories which at first sight would seem to make the soul incorporeal are found upon examination (see I., c. 4) to be vague or inconclusive. For contributions to a better understanding of A.'s own positive view we may refer to other later criticisms, e.g. 407 b 13, 408 a 34—b 29, 411 a 24 sqq.

403 b 20—404 b 8. Introduction to the critical review of previous opinions on the subject. Motion and perception, the primary characteristics of living things, have been taken to be the primary characteristics of soul, and motion has been taken to imply mobility (§ 1—2) e.g. by Democritus and Leucippus (§ 3), by certain Pythagoreans (§ 4), and by Anaxagoras. But there is a difference between Democritus and Anaxagoras. The former identifies intelligence with life, *νοῦς* with *ψυχή*, the latter is not so clear. He appears sometimes to distinguish them, as when he makes intelligence the final cause of the universe, sometimes to confound them, as when he attributes intelligence to even the humblest of living things (§ 5).

The important part which the conception of motion played in all previous speculation is fully recognised by A. Among other passages we may refer to *Phys.* VIII. 9, 265 b 17—266 a 5. There he starts with the remark that all who

have treated of motion (κίνησις) agree in considering spatial motion, φορά, as the primary motion. Their first principles are causes of spatial motion. This is exemplified by those who explained qualitative change by means of combination and separation (probably the Ionians), by Empedocles, whose Love and Strife bring about motion in space, and by Anaxagoras and by the Atomists. The other kinds of change (κίνησις) they attribute not to the primary elements or principles of things, but to the compounds to which they give rise. So, too, with those who introduce condensation and rarefaction to explain change. A. then continues 265 b 32 *ἔτι δὲ παρὰ τούτους οἱ τὴν ψυχὴν αἰτίαν ποιοῦντες κινήσεως· τὸ γὰρ αὐτὸ ἑαυτὸ κινοῦν ἀρχὴν εἶναί φασι τῶν κινουμένων, κινεῖ δὲ τὸ ζῷον καὶ πᾶν τὸ ἔμψυχον τὴν κατὰ τόπον ἑαυτὸ κίνησιν. καὶ κυρίως δὲ κινεῖσθαί φαμεν μόνον τὸ κινούμενον κατὰ τόπον· ἂν δ' ἠρεμῇ μὲν ἐν τῷ αὐτῷ, αὐξάνηται δ' ἢ φθίνῃ ἢ ἀλλοιούμενον τυγχάνῃ, πῇ κινεῖσθαι, ἁπλῶς δὲ κινεῖσθαι οὔ φαμεν.* "And so, again, with those who make the soul the cause of movement. For they say that the self-movent gives rise to motion in things which are moved. The animal and indeed every thing which has life moves itself with local movement. And movement in the proper sense of the term denotes only local movement. If a thing, while remaining at rest in the same place, grows or decays or undergoes qualitative change [i.e. by sense-perception], we say that it moves in a certain respect, but not that it moves absolutely."

b 20 ἅμα διαποροῦντας...22 συμπαραλαμβάνειν. Properly *διαπορεῖν = διέρχεσθαι τὰς ἀπορίας*, *Ind. Ar.* 187 b 11. It is one of A.'s canons that the complete enumeration of difficulties is an indispensable preliminary to their solution. The implication is, not only must we state the problems but we must also take into consideration the attempts of our predecessors to solve them. The problems have been stated 402 a 23 sqq. The review of previous opinions goes on to the end of the book. In the *Metaphysics*, the first book contains the review of previous speculation, while a comprehensive statement of *ἀπορίαι* follows in Book III (B). The most explicit account of this procedure by stating received opinions and discussing difficulties is found in *Eth. Nic.* 1145 b 2 *δεῖ δ', ὥσπερ ἐπὶ τῶν ἄλλων, τιθέντας τὰ φαινόμενα καὶ πρῶτον διαπορήσαντας οὕτω δεικνύναι μάλιστα μὲν πάντα τὰ ἔνδοξα περὶ ταῦτα τὰ πάθη, εἰ δὲ μή, τὰ πλεῖστα καὶ κυριώτατα· ἐὰν γὰρ λύηταί τε τὰ δυσχερῆ καὶ καταλείπηται τὰ ἔνδοξα, δεδειγμένον ἂν εἴη ἱκανῶς.* Cf. *De Cael.* II. 13, 294 b 6—13. For *εὐπορεῖν* cf. *Metaph.* 993 a 25—27 and especially 995 a 27—b 4. **συμπαραλαμβάνειν** i.e. (Them. 8, 39 H., 15, 22 Sp.) *κοινωνοὺς συμπαραλαβεῖν εἰς σκέψιν.* Cf. *Metaph.* 987 a 2 *ἐκ μὲν οὖν τῶν εἰρημένων καὶ παρὰ τῶν συνηδρευκότων ἤδη τῷ λόγῳ σοφῶν τοσαῦτα παρειλήφαμεν.*

b 23. ὅπως τὰ μὲν καλῶς εἰρημένα κτὲ. This statement of the end in view is almost stereotyped. Cf. *Pol.* 1260 b 32 sqq. *ἵνα τό τ' ὀρθῶς ἔχον ὀφθῇ καὶ τὸ χρήσιμον, ἔτι δὲ τὸ ζητεῖν τι παρ' αὐτὰς ἕτερον μὴ δοκῇ πάντως εἶναι σοφίζεσθαι βουλομένων, ἀλλὰ διὰ τὸ μὴ καλῶς ἔχειν ταύτας τὰς νῦν ὑπαρχούσας* [sc. *πολιτείας*], *διὰ τοῦτο ταύτην δοκῶμεν ἐπιβαλέσθαι τὴν μέθοδον*, *Metaph.* 983 b 1 *ὅμως δὲ παραλάβωμεν καὶ τοὺς πρότερον ἡμῶν εἰς ἐπίσκεψιν τῶν ὄντων ἐλθόντας*...b 5 *ἢ γὰρ ἕτερόν τι γένος εὑρήσομεν αἰτίας, ἢ ταῖς νῦν λεγομέναις μᾶλλον πιστεύσομεν* (cf. 993 a 11 sqq., 1073 b 10—17). **εἰ δέ τι μὴ καλῶς,** sc. *εἴρηται.*

b 24. ἀρχὴ δὲ τῆς ζητήσεως, sc. *ἐστί.* A more impersonal mode of statement than "we begin," cf. *Pol.* 1274 b 32 *τῷ περὶ πολιτείας ἐπισκοποῦντι... σχεδὸν πρώτη σκέψις περὶ πόλεως ἰδεῖν*, 1325 b 35 *ἀρχὴ τῶν λοίπων εἰπεῖν*, *De Long. Vit.* 464 b 21 *ἀρχὴ δὲ τῆς σκέψεως ἀναγκαία πρῶτον ἐκ τοῦ διαπορῆσαι περὶ αὐτῶν.*

b 25. τὰ μάλιστα δοκοῦνθ' ὑπάρχειν αὐτῇ κατὰ φύσιν. By what is called

hyperbaton *μάλιστα* has been separated from *κατὰ φύσιν ὑπάρχειν* with which it is to be taken and prefixed to *δοκοῦντα* with which it has nothing to do. Cf. for another glaring instance *τὴν κατὰ τόπον* **ἑαυτὸ** *κίνησιν*, *Phys.* 266 a 1 cited p. 211 *supra*. This constantly recurring idiom Mr Newman explains (see his *Politics*, Vol. III. p. 579) as intended to emphasise the words thus separated from their natural place. But sound had always more to do than sense with this trick of style: its inventor, Isocrates, used it as one means of avoiding a harsh collision of vowels. The natural attributes of soul must be regarded as identical with (402 a 8) *ὅσα συμβέβηκε περὶ αὐτήν*, some of which we were told (402 a 9) *δι' ἐκείνην* [*δοκεῖ*] *καὶ τοῖς ζῴοις ὑπάρχειν*. Adventitious attributes are excluded by *κατὰ φύσιν*, just as they are when *καθ' αὑτὸ* is added to *συμβαίνειν*.

b 25 τὸ ἔμψυχον...26 δοκεῖ. This is an *ἔνδοξον*, or prevalent opinion. The method of comparing *ἔμψυχον* and *ἄψυχον* A. himself adopts 413 a 20 sqq. Popular opinion had seized upon two characteristics of animate beings, overlooking or confusing with them others which A. distinguishes l.c., as e.g. nutrition and intelligence.

b 26. κινήσει τε καὶ τῷ αἰσθάνεσθαι. Though inadequate, this opinion receives some countenance from A. himself: see 427 a 17 sqq. and 432 a 15 sqq. From the former passage it appears how vaguely *τὸ αἰσθάνεσθαι* was construed, since, as A. remarks in the sequel, the upholders of this view make thought a species of perception. In III. 9 *loc. cit.* only *ἡ ψυχὴ ἡ τῶν ζῴων* is in question, to the exclusion of that of plants.

b 28. σχεδὸν δύο ταῦτα, "approximately these two characteristics," i.e. *κίνησις* and *τὸ αἰσθάνεσθαι*, which represent, more or less precisely, the qualities distinctive of soul in the view of the earlier thinkers. For the addition of *τὸ ἀσώματον* see below 405 b 11 sq., 409 b 20 sq.

b 29. καὶ μάλιστα καὶ πρώτως. *Ind. Ar.* 652 b 33 voc. *πρῶτος, πρώτως* usus philosophicus latissimum habet ambitum...(653 a 27) syn *κυρίως, ἁπλῶς, καθ' αὑτό*, significat ipsam per se rei notionem et naturam (ut quae iam a principio sit et rem constituat). *Metaph.* 1030 b 5 *ὁ πρώτως καὶ ἁπλῶς ὁρισμός*, 1031 a 14 *τὸ τί ἦν εἶναι τῶν οὐσιῶν ἐστίν μάλιστα καὶ πρώτως καὶ ἁπλῶς*, *Categ.* 5, 2 a 11 *οὐσία δέ ἐστιν ἡ κυριώτατά τε καὶ πρώτως καὶ μάλιστα λεγομένη*, *Eth. Nic.* 1157 a 30 *φιλία πρώτως καὶ κυρίως* dist. *καθ' ὁμοιότητα*, cf. Bz. ad *Metaph.* 1015 b 11. Thus *πρώτως* emphasises the primary notion of soul, the original meaning of the term; its first and foremost characteristic is that it is the movent. There is an interesting note by A. himself on the application of *πρῶτος* and *πρώτως* to motion in *Phys.* VIII. 7, 260 b 16—19. Of the three meanings of priority there given—(1) ontological independence or self-dependence, (2) temporal, and (3) logical priority—the last seems best to suit *πρώτως* here.

b 29 οἰηθέντες δὲ...30 κινεῖν ἕτερον. That the power to originate motion in something else belonged exclusively to objects which themselves move was another prevalent opinion which appears in various forms among the early philosophers. Cf. e.g. *infra* 405 a 24 *ᾗ δὲ λεπτότατον, κινητικὸν εἶναι*. That A. does not share this view we shall see in the next chapter.

b 31 ὅθεν Δημόκριτος μὲν...404 a 1 αὐτὴν εἶναι. There seems nothing to answer *μὲν* until we come to 404 a 16 *ἔοικε δέ*, for 404 a 5 (*ὁμοίως δὲ καὶ Λεύκιππος*) is parenthetical. We have no means of checking this statement, for A. is our oldest and most credible authority for this as for most of the opinions of the Atomists. The more precise definition of later writers (see Diels, *Doxographi Graeci*, p. 388) is derived ultimately from A.'s pupil Theophrastus. Observe that there are two statements here: (*a*) that Democritus identified soul with fire or warmth, (*b*) that his reason for doing so was the mobility of the

atoms of which fire or warmth consists. A. repeats both statements *infra* 405 a 8—13. See *note* on 406 b 20 sqq. On A.'s criticisms of Democritus generally cf. Lasswitz, *Geschichte der Atomistik* I., Dyroff, *Demokritstudien*; for D.'s psychology Hart, *Seelenlehre des Demokrits*; for his theory of cognition Natorp, *Erkenntnissproblem*, and for his theory of matter Bäumker, *Problem der Materie*.

404 a 1 πῦρ τι καὶ θερμόν......2 τὰ σφαιροειδῆ......4 ἀκτῖσιν, ὧν......5 λέγει. The suspicions of Madvig were first excited by 404 a 2 τὰ σφαιροειδῆ πῦρ καὶ ψυχὴν λέγει, which he bracketed as well as a 4 ὧν. This left the comparison of atoms with motes untouched. Diels, *Fragmente der Vorsokr.* p. 363, 18 regards the whole of the passage a 2 τὰ σφαιροειδῆ—a 4 ἀκτῖσιν, ὧν as an interpolation: "Die antike Glosse τὰ σφαιροειδῆ—ἀκτῖσιν benutzt das a 17 folgende Beispiel der ξύσματα." It must be granted that the omission of this as an intruding gloss or marginal summary relieves the construction considerably. As the traditional text stands, it is just possible to extract a grammatical sense if by a 4 ὧν we understand σχημάτων not ξυσμάτων. But a 5 τούτων δὲ also refers to the atoms. This is not surprising, the introduction of the parenthetical sentence (a 5) ὁμοίως δὲ καὶ Λεύκιππος having interrupted the regular course of the sentence which might otherwise have run ὧν τὴν μὲν πανσπερμίαν...λέγει, τὰ δὲ σφαιροειδῆ ψυχήν. Here at any rate μὲν and δὲ present an antithesis between atoms in general and spherical soul-atoms in particular, which is destroyed if with M. Rodier we refer ὧν on strictly grammatical grounds to a 3 τὰ καλούμενα ξύσματα or a 2 τὰ σφαιροειδῆ (τῶν ἀτόμων). Themistius (9, 9 H., 16, 6 Sp.) with his usual insight has selected the essential clauses in this rambling parenthetical sentence and re-arranged them thus: ὅθεν Δημόκριτος πῦρ καὶ θερμόν φησι τὴν ψυχήν· ἀπείρων γὰρ ὄντων τῶν σχημάτων ἃ ταῖς ἀτόμοις προστίθησι, τὴν μὲν πανσπερμίαν αὐτῶν στοιχεῖα ποιεῖ τῆς ὅλης φύσεως, τούτων δὲ τὰ σφαιροειδῆ τῆς ψυχῆς κτέ. But his further remarks prove that he, like the other Greek commentators, had the simile of the motes in his text and probably in its traditional place. The repetitions (a 2, 6) and the parentheses (a 3—4, a 5) can be paralleled in other passages where A. is writing carelessly. It is not imperative that anything should be sacrificed, for even against ὧν the case is by no means clear. Themistius inserts αὐτῶν after τὴν πανσπερμίαν although ἀπείρων γὰρ ὄντων τῶν σχημάτων has preceded.

404 a 1. ἀπείρων, "unlimited," i.e. infinite in number and in variety of shapes. Cf. *De Sensu* 4, 442 b 21, *De Cael.* III. 4, 303 a 5 πλήθει μὲν ἄπειρα, *De Gen. et Corr.* I. 1, 314 a 21 Δημόκριτος δὲ καὶ Λεύκιππος ἐκ σωμάτων ἀδιαιρέτων τἆλλα συγκεῖσθαί φασι. ταῦτα δ' ἄπειρα καὶ τὸ πλῆθος εἶναι καὶ τὰς μορφάς. Here (404 a 1) the latter seems emphasised.

a 2. σχημάτων καὶ ἀτόμων, "shapes or atoms," καί, as often, being explanatory. Sometimes A. calls the infinitesimal solids of the Atomists σχήματα, i.e. things which have figure, σχῆμα, 404 a 11, *De Gen. et Corr.* I. 2, 315 b 6 Δημόκριτος δὲ καὶ Λεύκιππος ποιήσαντες τὰ σχήματα τὴν ἀλλοίωσιν καὶ τὴν γένεσιν ἐκ τούτων ποιοῦσι. Here they are described first by the positive quality of shape or figure, and next by the negative quality of indivisibility. Similarly Lucretius (III. 246 et al.) uses *figurae* for atoms. The other qualities Democritus ascribed to matter were magnitude, solidity and mobility.

a 2. τὰ σφαιροειδῆ: cf. 405 a 9—13, 406 b 20 sqq., *De Resp.* 4, 472 a 3 λέγει δ' ὡς ἡ ψυχὴ καὶ τὸ θερμὸν ταὐτὸν τὰ πρῶτα σχήματα τῶν σφαιροειδῶν. Other testimonia: Aetius *Plac.* IV. 3. 5 (Diels, *Doxogr. Gr.* p. 388) Δημόκριτος πυρῶδες σύγκριμα ἐκ τῶν λόγῳ θεωρητῶν, σφαιρικὰς μὲν ἐχόντων τὰς ἰδέας, πυρίνην δὲ τὴν δύναμιν, ὅπερ σῶμα εἶναι, i.e. the atoms which constitute soul have spherical

shapes and a fiery nature, Cic. *Tusc. Disp.* I. § 22 Democritum...levibus et rotundis corpusculis efficientem animum concursu quodam fortuito omittamus, Nemesius, *De Nat. Hom.* c. 2 Δημόκριτος δὲ πῦρ. τὰ γὰρ σφαιροειδῆ σχήματα τῶν ἀτόμων συγκρινόμενα πῦρ τε καὶ ἀὴρ ψυχὴν ἀποτελεῖν [*Doxogr. Gr.* p. 388 t[b] 8, cf. p. 49, n. 2].

a 3. οἷον κτέ. So far we have had a clear statement, which is resumed at 404 a 5 τούτων δὲ τὰ σφαιροειδῆ ψυχήν: where the reason why spherical atoms were selected is given. But the interspersed simile of the motes in the sunbeams, as well as the more general reference to atomism as contained in the words ὧν τὴν μὲν πανσπερμίαν τῆς ὅλης φύσεως στοιχεῖα λέγει· ὁμοίως δὲ καὶ Λεύκιππος, tend rather to confuse the exposition; probably "soul-atoms," and not atoms in general, are compared to motes in the sunbeam: and, if we lay unusual stress on φαίνεται, the point of comparison may be, as Them. (9, 13—19 H., 16, 12—20 Sp.) says, that soul, though invisible, may be corporeal, as are the motes which, ordinarily invisible, are seen in the sunlight under certain conditions. With this Simpl. 25, 30—26, 1 and Philop. 67, 21—28 in the main agree, though they lay more stress upon the minuteness than upon the invisibility of the atoms. But the atoms are wholly imperceptible to sense; they are not, like the motes, though usually invisible, visible under exceptional circumstances. The point of the comparison between motes and atoms must be the incessant mobility (a 20) and endless multitude of the motes: in Milton's words "Shapes ...as thick and numberless as the gay motes that people the sunbeams." The fact which Them. advances, their partial and occasional visibility, really makes against them as suitable illustrations of the invisible atoms. Lucretius II. 114—141 uses the simile of the motes to illustrate the incessant motion, not of soul-atoms but of atoms in general: conicere ut possis ex hoc, primordia rerum | quale sit in magno iactari semper inani (121 sq.). We see, he says, the motes, impelled by unseen blows, change their course and tumble restlessly, now in one direction, now in another, and we must infer that this restlessness and change of direction are due to unseen movements of the atoms. For the atoms move first of themselves; next those bodies which form a small aggregate are impelled and set in movement by the unseen strokes of the atoms, and they next in turn stir up bodies which are a little larger, till by little and little they become visible and are seen to move in the sun, though why they move is not seen.

a 4. ὧν, sc. σχημάτων *not* ξυσμάτων.

a 4. τὴν μὲν πανσπερμίαν. Of πανσπερμία Trend. says vox, ut videtur, Democrito in hac re propria. Cf. *Phys.* III. 4, 203 a 19 ὅσοι δ' ἄπειρα ποιοῦσι τὰ στοιχεῖα, καθάπερ Ἀναξαγόρας καὶ Δημόκριτος, ὁ μὲν ἐκ τῶν ὁμοιομερῶν, ὁ δ' ἐκ τῆς πανσπερμίας τῶν σχημάτων, τῇ ἁφῇ συνεχὲς τὸ ἄπειρον εἶναι φασίν. The word is also used of the chaotic mixture of atoms in air, earth and water according to the Atomists, *De Cael.* III. 4, 303 a 14 ἀέρα δὲ καὶ ὕδωρ καὶ τἆλλα μεγέθει καὶ μικρότητι διεῖλον, ὡς οὖσαν αὐτῶν τὴν φύσιν οἷον πανσπερμίαν πάντων τῶν στοιχείων. On the other hand it serves to denote on the view of Anaxagoras what others call the four elements: *De Gen. et Corr.* I. 1, 314 a 28 οἱ δὲ [sc. οἱ περὶ Ἀναξαγόραν] ταῦτα μὲν [sc. τὰ ὁμοιομερῆ] ἁπλᾶ καὶ στοιχεῖα, γῆν δὲ καὶ πῦρ καὶ ὕδωρ καὶ ἀέρα σύνθετα· πανσπερμίαν γὰρ εἶναι τούτων. Cf. also of Anaxagoras *De Cael.* III. 3, 302 b 1 ἀέρα δὲ καὶ πῦρ μῖγμα τούτων [flesh, bone, and the like] καὶ τῶν ἄλλων σπερμάτων πάντων· εἶναι γὰρ ἑκάτερον αὐτῶν ἐξ ἀοράτων ὁμοιομερῶν πάντων ἠθροισμένων. While σπέρματα χρημάτων occurs in the fragments of Anaxagoras *fr.* 4 Diels, we have no such evidence for the use of the word by the Atomists. In *De Sensu* 4, 441 a 6 πανσπερμία χυμῶν is applied to water as a reservoir or receiving-house of all possible flavours.

a 5. Λεύκιππος. That a work περὶ νοῦ was ascribed to him we know from the single citation of his writings which has come down to us on good authority (see Aet. *Plac.* I. 25, 4, p. 321 Diels, *Doxogr. Gr.*): Λ... λέγει ἐν τῷ Περὶ νοῦ "οὐδὲν χρῆμα μάτην γίνεται ἀλλὰ πάντα ἐκ λόγου τε καὶ ὑπ' ἀνάγκης." Diels thinks that such a work probably dealt with the soul (35 *Philol.-Vers.*, p. 102). The Atomists identified νοῦς with ψυχή: see note on 404 a 28 **ἁπλῶς** κτέ. What information we have about Leucippus is collected by Diels in *Fragmente der Vorsokratiker* 54, pp. 356—365. Leucippus (in view of Diog. Laert. x. 13, be it remarked) is always treated by A. as a historical person, distinct from Democritus.

a 5. τούτων δὲ, "of these atoms." The demonstrative refers to the same thing as the relative ὧν, Greek idiom being averse to the repetition of the relative. So 417 a 5 sq. ὧν ἐστὶν ἡ αἴσθησις καθ' αὑτὰ ἢ τὰ συμβεβηκότα τούτοις. The pronouns ὧν and τούτοις both replace στοιχεῖα, which has preceded.

a 6. τὰ σφαιροειδῆ. Spherical atoms are asserted to be the constituents of fire, *infr.* 405 a 11 sqq., *De Cael.* III. 4, 303 a 12 ποῖον δὲ καὶ τί ἑκάστου τὸ σχῆμα τῶν στοιχείων, οὐθὲν ἐπιδιώρισαν, ἀλλὰ μόνον τῷ πυρὶ τὴν σφαῖραν ἀπέδωκαν, *ib.* III. 8, 306 b 29 ἀλλὰ μὴν καὶ πρὸς τὰ πάθη τε καὶ τὰς δυνάμεις καὶ τὰς κινήσεις ἀσύμφωνα τὰ σχήματα τοῖς σώμασιν, εἰς ἃ μάλιστα βλέψαντες οὕτω διένειμαν. οἷον ἐπεὶ τὸ πῦρ εὐκίνητόν ἐστι καὶ θερμαντικὸν καὶ καυστικόν, οἱ μὲν [the Atomists] ἐποίησαν αὐτὸ σφαῖραν, οἱ δὲ [the Platonists] πυραμίδα. ταῦτα γὰρ εὐκινητότατα μὲν διὰ τὸ ἐλαχίστων ἅπτεσθαι καὶ ἥκιστα βεβηκέναι, θερμαντικώτατα δὲ καὶ καυστικώτατα, διότι τὸ μὲν [the sphere] ὅλον ἐστὶ γωνία, τὸ δὲ [the pyramid] ὀξυγωνιώτατον, καίει δὲ καὶ θερμαίνει ταῖς γωνίαις, ὥς φασίν, *De Gen. et Corr.* I. 8, 326 a 3 καίτοι τοῦτό γε ἄτοπον, τὸ μόνον ἀποδοῦναι τῷ περιφερεῖ σχήματι τὸ θερμόν. ἀνάγκη γὰρ καὶ τοὐναντίον τὸ ψυχρὸν ἄλλῳ τινὶ προσήκειν τῶν σχημάτων.

a 6 διὰ τὸ...7 διαδύνειν. The spherical body meets with less obstruction in its course because, as explained in *De Cael.* III. 8, 306 b 34 (see last note), its contact with an obstacle is confined to the smallest extent of surface, διὰ τὸ ἐλαχίστων ἅπτεσθαι, further it is the least stable of all solid bodies.

a 7. τοὺς τοιούτους ῥυσμούς, such, i.e. spherical, atomic shapes, "figures." The Ionic ῥυσμὸς was used by Leucippus and Democritus, and the Attic σχῆμα was substituted for it by A., as he himself explains *Metaph.* 985 b 15 διαφέρειν γάρ φασι τὸ ὂν ῥυσμῷ καὶ διαθιγῇ καὶ τροπῇ μόνον· τούτων δὲ ὁ μὲν ῥυσμὸς σχῆμά ἐστιν, ἡ δὲ διαθιγὴ τάξις, ἡ δὲ τροπὴ θέσις· διαφέρει γὰρ τὸ μὲν Α τοῦ Ν σχήματι. Herodotus uses ῥυθμός of the "shape" of letters, v. 58 μετέβαλον καὶ τὸν ῥυθμὸν τῶν γραμμάτων. But cf. Archil. *fr.* 40 οἷος ῥυσμὸς ἀνθρώπους ἔχει: and the use of the form ῥυσμὸς by Callimachus proves that the form comes from the earlier Epic diction.

a 7 καὶ κινεῖν...8 καὶ αὐτά: cf. *infr.* 406 b 15 sqq.

a 8 ὑπολαμβάνοντες...9 τὴν κίνησιν: cf. 403 b 29 τὸ κινοῦν, *infr.* 404 a 11 τῶν σχημάτων τὰ παρέχοντα τοῖς ζῴοις τὴν κίνησιν, a 21, 23.

a 9. ὅρον, "determinant," i.e. determining factor or principle, distinctive mark. *Ind. Ar.* 529 b 44 omnino id significat, quo alicuius rei natura constituitur et definitur, *De Gen. An.* IV. 1, 766 a 31 τῆς δὲ δυνάμεως ὅρος καὶ τῆς ἀδυναμίας τὸ πεπτικὸν εἶναι ἢ μὴ πεπτικόν, "potency or impotence is determined by the animal having or not having a good digestion": *Pol.* 1294 a 10 ἀριστοκρατίας ὅρος ἀρετή: 1294 b 14 τοῦ δ' εὖ μεμῖχθαι δημοκρατίαν καὶ ὀλιγαρχίαν ὅρος κτέ. This sense of the word is quite distinct from that of the standard to aim at; it is more akin to, yet distinct from, that of definition. So Plato, e.g. *Rep.* 551 A νόμον τίθενται ὅρον πολιτείας ὀλιγαρχικῆς, ταξάμενοι πλῆθος χρημάτων, *Politic.* 292 A οἰόμεθά τινα τούτων τῶν πολιτειῶν ὀρθὴν εἶναι τούτοις τοῖς ὅροις ὁρισθεῖσαν,

ἑνὶ καὶ ὀλίγοις καὶ πολλοῖς, καὶ πλούτῳ καὶ πενίᾳ, καὶ τῷ βιαίῳ καὶ ἑκουσίῳ, e.g. wealth and a paucity of rulers are characteristics which help to determine oligarchy. Cf. also *Metaph.* 1049 a 5 *ὅρος δὲ τοῦ μὲν ἀπὸ διανοίας ἐντελεχείᾳ γιγνομένου ἐκ τοῦ δυνάμει ὄντος, ὅταν κτέ.*

a 10. τοῦ περιέχοντος, "the surrounding atmosphere"; "the physical environment" in which animals live. This term seems to have been vaguely used. It has a wider sense in Anaxagoras *fr.* 2 and 14 D: and similarly Hippol. *ref. haeres.* I. 12 [*Doxogr. Gr.* 564, 29], in what professes to be an account of the views of Leucippus, *κόσμους δὲ* [*ὧδε* inseruit de coniectura Usener] *γίνεσθαι λέγει· ὅταν εἰς μέγα κενὸν ἐκ τοῦ περιέχοντος* [i.e. from the universe outside this void] *ἀθροισθῇ πολλὰ σώματα καὶ συρρυῇ, προσκρούοντα ἀλλήλοις κτέ.*

a 11 τῶν σχημάτων τὰ παρέχοντα...12 τὴν κίνησιν, i.e. spherical atoms; v. *supr.* 404 a 2, 6, *notes*.

a 12. βοήθειαν γίγνεσθαι θύραθεν, i.e. the soul atoms within (*τὰ ἐνυπάρχοντα*) are recruited or reinforced by the arrival of fresh soul-atoms from without. The function of respiration according to Democritus is further explained in *de Resp.* 4. 471 b 30—472 a 26. I cite 472 a 5 *συγκρινομένων οὖν αὐτῶν* [the spherical soul-atoms] *ὑπὸ τοῦ περιέχοντος ἐκθλίβοντος, βοήθειαν γίνεσθαι τὴν ἀναπνοήν φησιν.*

a 15. συνανείργοντα τὸ συνάγον καὶ πηγνύον, int. *τὸ περιέχον* (*supr.* a 10 *συνάγοντος γὰρ τοῦ περιέχοντος τὰ σώματα*): cf. *De Resp.* 4, 472 a 31 *ἐν γὰρ ταῖς ἀλέαις θερμαινόμενοι μᾶλλον καὶ τῆς ἀναπνοῆς μᾶλλον δεόμεθα καὶ πυκνότερον ἀναπνέομεν πάντες· ὅταν δὲ τὸ πέριξ ᾖ ψυχρὸν καὶ συνάγῃ καὶ συμπηγνύῃ τὸ σῶμα, κατέχειν συμβαίνει τὸ πνεῦμα.* A. is there urging that the facts are inconsistent with this atomistic theory. It is when we are hot that we breathe quickly; when the surrounding atmosphere is cold, when it compresses and contracts the body, we hold in our breath; and yet, A. continues, that was the time for the external air to enter and counteract the compression (a 35) *καίτοι τότ' ἐχρῆν τὸ θύραθεν εἰσιὸν κωλύειν τὴν σύνθλιψιν.* The verb *πηγνύναι* is used of compression by cold or by heat (*De Gen. An.* II. 6, 743 a 5 *συνίσταται καὶ πήγνυται τὰ μὲν ψυχρῷ τὰ δὲ θερμῷ*) or of pressure generally, as here.

a 16. ἕως ἂν δύνωνται τοῦτο ποιεῖν, i.e. *ἀναπνεῖν*. The account in *De Resp.* 4 is more explicit: 472 a 10 *καὶ διὰ τοῦτο ἐν τῷ ἀναπνεῖν καὶ ἐκπνεῖν εἶναι τὸ ζῆν καὶ ἀποθνήσκειν· ὅταν γὰρ κρατῇ τὸ περιέχον συνθλῖβον, καὶ μηκέτι θύραθεν εἰσιὸν δύνηται ἀνείργειν, μὴ δυναμένου ἀναπνεῖν, τότε συμβαίνειν τὸν θάνατον τοῖς ζῴοις· εἶναι γὰρ τὸν θάνατον τὴν τῶν τοιούτων σχημάτων ἐκ τοῦ σώματος ἔξοδον ἐκ τῆς τοῦ περιέχοντος ἐκθλίψεως.* Though A. does not mention the fact, it is highly probable that the Atomists gave a similar explanation of sleep as the partial expulsion of warm soul-atoms. Cf. Aet. *Plac.* V. 25, 3 (*Doxogr. Gr.* 437, 13).

a 16. τὸ παρὰ τῶν Πυθαγορείων λεγόμενον. Note that *παρὰ* replaces *ὑπὸ* used of the agent. Cf. *De Gen. et Corr.* II. 10, 336 b 16 *τοῖς παρ' ἡμῶν λόγοις. Metaph.* 985 b 22 *ἐζητῆσθαι παρὰ τῶν πρότερον*, 986 b 6 *διήρθρωται παρ' ἐκείνων.*

a 17. διάνοιαν. Cf. *Ind. Ar.* s.v.: *διάνοια* denotes the sense and meaning of a term, "vis ac significatio vocabuli," as opposed to the term *ὄνομα* itself (*Ind. Ar.* 186 b 15): or again (*ib.* 19) the intellectual element of a speech as opposed to the language and style (*λέξις, λόγος*); and so it is used of a writer's spirit or intention as distinct from his words, literally understood, cf. *Metaph.* 985 a 4 *λαμβάνειν πρὸς τὴν διάνοιαν καὶ μὴ πρὸς ἃ ψελλίζεται λέγων.*

a 19. περὶ δὲ τούτων εἴρηται διότι. *Τούτων* = *τῶν ξυσμάτων* and *διότι* = *ὅτι*, that: Philop. 70, 35 *εἴρηται γάρ, φησί, περὶ αὐτῶν, ὅτι ὁρῶνται ἀεικίνητα, κἂν ᾖ νηνεμία, ὡς οἴκοθεν καὶ μὴ ὑπὸ τοῦ ἀνέμου ἔχει τὴν κίνησιν.* To whom this statement is to be attributed is not clear. It may be A. himself, though the fact that the constant motion of motes is noticed, *Probl.* XV. 13, 913 a 8 sqq., is no

proof. Or Sophonias may be right in assigning it to the Pythagoreans in question, 11, 22 εἴρηται δὲ αὐτοῖς τοῦτο, ἐπεὶ συνεχῶς φαίνεται κινούμενα. Obviously he understood διότι to mean "because" as did Themistius (9, 30 H., 17, 5 Sp.).

a 21. καὶ ὅσοι...τὸ αὐτὸ κινοῦν, a doctrine of Plato and his school maintained amongst others by Xenocrates, the contemporary head of the Academy, who is seldom referred to by name. His theory is sharply criticised *infr.* I. 4. 408 b 32 sqq. Philop. 71, 6 probably on the strength of 405 a 29 sqq. also names Alcmaeon, αἰνίττεται εἰς Πλάτωνα καὶ Ξενοκράτην καὶ Ἀλκμαίωνα. Philop. adds 71, 9 ὅτι δὲ ὁ Πλάτων αὐτοκίνητον λέγων τὴν ψυχὴν οὐ τὴν κατὰ τόπον ἔλεγε κίνησιν, αὐτὸς σαφῶς λέγει ἐν τοῖς Νόμοις, presumably 895 E, 896 B. The passage in the *Laws* begins thus, 895 E ΑΘ. Ὧι δὴ ψυχὴ τοὔνομα, τίς τούτου λόγος; ἔχομεν ἄλλον πλὴν τὸν νυνδὴ ῥηθέντα [894 C], τὴν δυναμένην αὐτὴν αὑτὴν κινεῖν κίνησιν; ΚΛ. Τὸ ἑαυτὸ κινεῖν φῂς λόγον ἔχειν τὴν αὐτὴν οὐσίαν, ἥνπερ τοὔνομα, ὃ δὴ πάντες ψυχὴν προσαγορεύομεν; ΑΘ. Φημί γε κτέ. To the same effect Simpl. 25, 14—24 (citing Pl. *Legg.* 894 C) and 26, 21—31. As to Plato, the *locus classicus* is *Phaedr.* 245 C—E, where it is proved μὴ ἄλλο τι εἶναι τὸ αὐτὸ ἑαυτὸ κινοῦν ἢ ψυχήν. The tenth book of the *Laws*, especially the important section 894 C—896 E, proves that Plato maintained this doctrine to the last. This is recognised by A. in *Metaph.* 1072 a 1 ἣν οἴεται ἐνίοτε ἀρχὴν εἶναι, τὸ αὐτὸ ἑαυτὸ κινοῦν, where the context shows that soul is meant.

a 21 ἐοίκασι γὰρ...25 αὐτὸ κινεῖται. Here the inference is more apparent than in the previous statement, 403 b 28—31. But the reasoning by which the conclusion is reached is A.'s own. He is too fond of interpreting his predecessors from his own point of view and too apt to read more into their suggestions than was originally intended.

a 25 ὁμοίως δὲ...ψυχὴν εἶναι...26 τὴν κινοῦσαν. The feminine by a curious sort of attraction for τὸ κινοῦν the neuter (cf. 403 b 29). Anaxagoras declared νοῦς to be the cause of motion which communicated motion to the primitive chaos and brought like to like (404 a 26 τὸ πᾶν ἐκίνησε νοῦς). (Cf. Anax. *fr.* 12 D καὶ τῆς περιχωρήσιος τῆς συμπάσης νοῦς ἐκράτησεν, ὥστε περιχωρῆσαι τὴν ἀρχήν, and *fr.* 13 D καὶ ἐπεὶ ἤρξατο ὁ νοῦς κινεῖν, ἀπὸ τοῦ κινουμένου παντὸς ἀπεκρίνετο.) As the context shows (404 a 27 οὐ μὴν παντελῶς γ' ὥσπερ Δημόκριτος), A. is aware that the identification of this νοῦς with ψυχή, as he uses it throughout the treatise for the vital force of animals, is not satisfactorily made out. Cf. *infr.* 405 a 13 and *note*.

a 26. εἴ τις ἄλλος. Possibly a reference to Hermotimus of whom we hear *Metaph.* 984 b 19 αἰτίαν δ' ἔχει πρότερον [sc. Ἀναξαγόρου] Ἑρμότιμος ὁ Κλαζομένιος εἰπεῖν.

a 27. ἐκεῖνος μὲν γάρ, sc. Democritus, who is for A. in the background now that we are immediately concerned with Anaxagoras.

a 28. ἁπλῶς ψυχὴν ταὐτὸν καὶ νοῦν, sc. εἶναι λέγει (the latter word must also be supplied above with a 27) which A. himself supplies (a 31). The identity between ψυχή and νοῦς in the Atomic system is again asserted (405 a 8—13) and *De Resp.* 472 a 7 τῶν τοιούτων [sc. σχημάτων] ἃ καλεῖ ἐκεῖνος νοῦν καὶ ψυχήν. Cf. Aet. IV. 5. 12 (*Doxogr. Gr.* 391) Παρμενίδης καὶ Ἐμπεδοκλῆς καὶ Δημόκριτος ταὐτὸν νοῦν καὶ ψυχήν, καθ' οὓς οὐδὲν ἂν εἴη ζῷον ἄλογον κυρίως. The Atomists are no doubt included by A. among the older philosophers who did not distinguish between thought and sense-perception, but explained both as a corporeal change. See 427 a 21, 26. Cf. Theophr. *De Sensibus* 58, 72 [*Doxogr. Gr.* 515, 22 sqq., 520, 13 sqq.], Aet. IV. 8. 5 [*Doxogr. Gr.* 394, 26 sqq.] Λεύκιππος Δημόκριτος τὰς αἰσθήσεις καὶ τὰς νοήσεις ἑτεροιώσεις εἶναι τοῦ σώματος, 8. 10 (*Doxogr. Gr.* 395, 25) Λεύκιππος Δημόκριτος Ἐπίκουρος τὴν αἴσθησιν καὶ τὴν

νόησιν γίνεσθαι εἰδώλων ἔξωθεν προσιόντων. μηδενὶ γὰρ ἐπιβάλλειν μηδετέραν χωρὶς τοῦ προσπίπτοντος. The identity of νοῦς and ψυχή is more completely implied in the line of Empedocles *frag.* 110, 10 D, 313 Karsten πάντα γὰρ ἴσθι φρόνησιν ἔχειν καὶ νώματος αἶσαν. So far from confining intelligence to certain animals only (ζῷα), as did A. (404 b 5 sq., 427 b 7 sq., 12—14), Empedocles here ascribes intelligence and the power of thought to all things, including, as Sext. Emp. *adv. Math.* VIII. 286 says, even plants. Thus there would be no ἄλογα ζῷα in the strict sense of the term, Aet. IV. 5. 12 (cited above). Again, if the identity of νοῦς and ψυχή be maintained, the problem εἰ μεριστὴ ἡ ψυχὴ ἢ ἀμερής (402 b 1) must be regarded as foreclosed, Philop. 35, 12 ἀμερῆ γάρ φησιν αὐτὴν [sc. τὴν ψυχήν] Δημόκριτος εἶναι καὶ οὐ πολυδύναμον, ταὐτὸν εἶναι λέγων τὸ νοεῖν τῷ αἰσθάνεσθαι καὶ ἀπὸ μιᾶς ταῦτα προέρχεσθαι δυνάμεως.

a 28. τὸ γὰρ ἀληθὲς εἶναι τὸ φαινόμενον. This proposition, which recurs as the doctrine of "some" thinkers 427 b 3, is understood by A. to mean the denial of objective truth, and to it he opposes his own position, *Metaph.* 1010 b 1 sq. ὡς οὐ πᾶν τὸ φαινόμενον ἀληθές. Democritus is classed with Empedocles as holding the doctrine of relativity, *ib.* 1009 b 1—17: "the opinion that appearances are true has been derived by some from sensible things, which do not appear the same (e.g. sweet or bitter) to different men at the same time, or to the same men at different times, or the same to men as they appear to other animals": *ib.* 9 ποῖα οὖν τούτων ἀληθῆ ἢ ψευδῆ ἄδηλον· οὐδὲν γὰρ μᾶλλον τάδε ἢ τάδε ἀληθῆ, ἀλλ' ὁμοίως. διὸ Δημόκριτός γέ φησιν ἤτοι οὐδὲν εἶναι ἀληθὲς ἢ ἡμῖν γ' ἄδηλον. ὅλως δὲ διὰ τὸ ὑπολαμβάνειν φρόνησιν μὲν τὴν αἴσθησιν, ταύτην δ' εἶναι ἀλλοίωσιν, τὸ φαινόμενον κατὰ τὴν αἴσθησιν ἐξ ἀνάγκης ἀληθὲς εἶναί φασιν· ἐκ τούτων γὰρ καὶ Ἐμπεδοκλῆς καὶ Δημόκριτος καὶ τῶν ἄλλων ὡς ἔπος εἰπεῖν ἕκαστος τοιαύταις δόξαις γεγένηνται ἔνοχοι. More explicitly of the Atomists alone *De Gen. et Corr.* I. 2. 315 b 9 ἐπεὶ δ' ᾤοντο τἀληθὲς ἐν τῷ φαίνεσθαι, ἐναντία δὲ καὶ ἄπειρα τὰ φαινόμενα, τὰ σχήματα ἄπειρα ἐποίησαν, ὥστε ταῖς μεταβολαῖς τοῦ συγκειμένου τὸ αὐτὸ ἐναντίον δοκεῖν ἄλλῳ καὶ ἄλλῳ, καὶ μετακινεῖσθαι μικροῦ ἐμμιγνυμένου, καὶ ὅλως ἕτερον φαίνεσθαι ἑνὸς μετακινηθέντος· ἐκ τῶν αὐτῶν γὰρ τραγῳδία καὶ κωμῳδία γίνεται γραμμάτων.

Zeller, *Pre-Socratics*, Eng. Tr. Vol. II. p. 272, points out the inconsistency between this supposed tenet of Democritus and the whole tenour of his system, especially with his famous distinction between ἡ σκοτίη γνώμη, i.e. sense-knowledge, and ἡ γνησίη γνώμη, whereby atoms and void are affirmed to be the only reality, for which see *frag.* 11 ap. Sext. Emp. VII. 139. Zeller continues: "If, therefore, Aristotle attributes to Democritus the opinion that the sensible perception as such is true, the statement is founded merely on his own inferences; because the Atomistic philosopher did not definitely distinguish between the faculty of perception and that of thought, therefore Aristotle concludes that he must have put both on the same footing in respect of their truth." Cf. Natorp, *Erkenntnissproblem*, p. 164 sqq. The passage I have above cited from *Metaph.* 1009 b 1—17 is part of A.'s defence of the law of contradiction, that a thing cannot be at the same time and in the same respect both A and not-A, which we are justified in asserting D. held as firmly as A. himself. Cf. further 426 a 20 sqq. Dyroff, however (*Demokrit-Studien*, pp. 74, 88), inclines to think that D. himself and not A. drew this inference. Dyroff thinks A. is right in holding that because αἰσθάνεσθαι = νοεῖν and sense-perception is an ἀλλοίωσις (1009 b 13: Zeller and Natorp overlook this), therefore that which appears by means of sense-perception is true. Instead of "thought and perception both depend upon body" D. said "thought is perception, both are corporeal," and this, Dyroff thinks, justifies the conclusion,

even if A. drew it. Whether D. did, or did not, deny objective existence altogether, his position as regards the sensible qualities of matter is clear. He was the first to lay down the distinction between the so-called "primary" and "secondary" qualities. The atoms have no secondary qualities. Thus colours, flavours, smells *per se* have no objective existence: they, at all events, are subjective affections of the percipient. Colour belongs not to the atoms, but to the natural objects which are produced by the aggregation of atoms, and is due to the order, shape and position of the atoms in such aggregates, whereby they act upon our sense and qualitatively alter it. Cf. Theoph. *De Sensibus* 63 πάντα πάθη τῆς αἰσθήσεως ἀλλοιουμένης, ἐξ ἧς γίνεσθαι τὴν φαντασίαν, 69 τὸ δὲ γλυκὺ καὶ ὅλως τὸ αἰσθητὸν πρὸς ἄλλο καὶ ἐν ἄλλοις, ὥς φησιν, 64 τὰ περὶ τοὺς χυλοὺς ἀναφέρων τὴν φαντασίαν πρὸς ἄνθρωπον. For the doctrine of universal relativity as applied to sense-perception by the followers of Heraclitus and Protagoras the *locus classicus* is Pl. *Theaet.* 153—157, where again the salient example is colour (156 C—E), though all sensible qualities are expressly included, 156 B, E.

a 30. Ἕκτωρ κεῖτ' ἀλλοφρονέων. The actual words do not occur in our text of Homer. In *Il.* 23, 698 however the word ἀλλοφρονέοντα in the required sense of "swooning" is used of Euryalus after the boxing-match (κὰδ δ' ἀλλοφρονέοντα μετὰ σφίσιν εἷσαν ἄγοντες), while in *Il.* 22, 330 it is said of Hector in his last fight with Achilles that he "fell in the dust" (ἤριπε δ' ἐν κονίῃσ') and then at 337 that "faint and weak he bespake Achilles" (τὸν δ' ὀλιγοδρανέων προσέφη). Cf. *Metaph.* 1009 b 28 φασὶ δὲ καὶ τὸν Ὅμηρον ταύτην ἔχοντα φαίνεσθαι τὴν δόξαν [the theory of relativity ὅτι τοιαῦτ' αὐτοῖς ἔσται τὰ ὄντα οἷα ἂν ὑπολάβωσιν], ὅτι ἐποίησε τὸν Ἕκτορα, ὡς ἐξέστη ὑπὸ τῆς πληγῆς, κεῖσθαι ἀλλοφρονέοντα, ὡς φρονοῦντας μὲν καὶ τοὺς παραφρονοῦντας ἀλλ' οὐ ταὐτά. δῆλον οὖν ὅτι, εἰ ἀμφότεραι φρονήσεις, καὶ τὰ ὄντα ἅμα οὕτω τε καὶ οὐχ οὕτως ἔχει. Sense as well as thought suffered from the blow, so that φρονεῖν and ἀλλοφρονεῖν must be understood of consciousness in the widest sense. (On αἰσθάνεσθαι=to be conscious, an extension of meaning not really analogous, see 425 b 12, *note*.) Democritus had firmly grasped the dependence of the normal consciousness upon the healthy physical condition alike of the body and the equally material soul. This point is brought out by Theophrastus *De Sensibus* 58 (Diels, *Doxogr. Gr.* 515, 23 sqq.) γίνεται [int. τὸ φρονεῖν] συμμέτρως ἐχούσης τῆς ψυχῆς κατὰ τὴν κρᾶσιν [Schneider's corr. for μετὰ τὴν κίνησιν]· ἐὰν δὲ περίθερμός τις ἢ περίψυχρος γένηται, μεταλλάττειν φησί. διὸ καὶ τοὺς παλαιοὺς καλῶς τοῦθ' ὑπολαβεῖν ὅτι ἐστὶν 'ἀλλοφρονεῖν.' In Hector's case the chill of approaching death is the disturbing cause.

a 30 οὐ δὴ χρῆται...31 νοῦν. χρῆται, sc. Democritus. The divergence between his use of the term νοῦς and A.'s comes out more clearly here. To A. νοῦς is a distinct faculty, one of several concerned with truth, cf. 428 a 17 sq., a 3—5, *Eth. Nic.* 1139 b 15 ἔστω δὴ οἷς ἀληθεύει ἡ ψυχὴ τῷ καταφάναι ἢ ἀποφάναι, πέντε τὸν ἀριθμόν· ταῦτα δ' ἐστὶ τέχνη ἐπιστήμη φρόνησις σοφία νοῦς· ὑπολήψει γὰρ καὶ δόξῃ ἐνδέχεται διαψεύδεσθαι. That neither φρονεῖν nor νοεῖν can be identified with αἰσθάνεσθαι is argued succinctly 427 b 6—14. Democritus (and Leucippus, if the work Περὶ νοῦ is rightly ascribed to him) has not so differentiated the term, but employs it in the older and vaguer sense for soul in general as the animating principle or part. This is the usual meaning of νόος in Homer and the older poets (ἐνὶ στήθεσσιν ἀτάρβητος νόος ἐστίν, εὐμενεῖ νόῳ) frequent in Hdt., e.g. VIII. 97 ἐκ παντὸς νόου, and at all periods in the phrase κατὰ νοῦν.

404 b 1. ἧττον διασαφεῖ. A. is perfectly sure that Democritus uses νοῦς and ψυχὴ as interchangeable terms. That Anaxagoras did so is not so clear. Cf. note on 404 a 25. Here A. argues that the νοῦς which Anaxagoras finds in all

living things must be what A. himself means by ψυχή, and that it cannot be ὁ κατὰ φρόνησιν νοῦς: but below (405 a 13) he decides that by νοῦς Anaxagoras intended something different from ψυχή, thus widely diffused through all animate beings. Cf. b 1 πολλαχοῦ μὲν...2 ἑτέρωθι δέ. **περὶ αὐτῶν**, i.e. περὶ ψυχῆς καὶ νοῦ. Both terms are found in *frag.* 12 D καὶ ὅσα γε ψυχὴν ἔχει καὶ μείζω καὶ ἐλάσσω, πάντων νοῦς κρατεῖ, where ψυχὴν ἔχειν = ἔμψυχα εἶναι as in *frag.* 4 D καὶ ἀνθρώπους τε συμπαγῆναι καὶ τὰ ἄλλα ζῷα ὅσα ψυχὴν ἔχει. Pl. *Crat.* 400 A joins ψυχή with νοῦς when he refers to the principal doctrine of Anaxagoras: καὶ τὴν τῶν ἄλλων ἁπάντων φύσιν οὐ πιστεύεις Ἀναξαγόρᾳ νοῦν τε καὶ ψυχὴν εἶναι τὴν διακοσμοῦσαν καὶ ἔχουσαν.

b 2. **τὸ αἴτιον τοῦ καλῶς καὶ ὀρθῶς**, sc. ἔχειν. The view that Anaxagoras regarded νοῦς as the cause of the beautiful and orderly arrangement in the world is also expressed in *Metaph.* 984 b 8—23, esp. 15 νοῦν δή τις εἰπὼν ἐνεῖναι, καθάπερ ἐν τοῖς ζῴοις, καὶ ἐν τῇ φύσει τὸν αἴτιον τοῦ κόσμου καὶ τῆς τάξεως πάσης οἷον νήφων ἐφάνη παρ' εἰκῇ λέγοντας τοὺς πρότερον. Cf. *frag.* 12 D καὶ τὰ συμμισγόμενά τε καὶ ἀποκρινόμενα καὶ διακρινόμενα πάντα ἔγνω νοῦς. καὶ ὁποῖα ἔμελλεν ἔσεσθαι καὶ ὁποῖα ἦν, ἅσσα νῦν μὴ ἔστι, καὶ ὁποῖα ἔστι, πάντα διεκόσμησε νοῦς, καὶ τὴν περιχώρησιν ταύτην, ἣν νῦν περιχωρέει τά τε ἄστρα καὶ ὁ ἥλιος καὶ ἡ σελήνη καὶ ὁ ἀὴρ καὶ ὁ αἰθὴρ οἱ ἀποκρινόμενοι.

b 2. **ἑτέρωθι δὲ...ψυχήν.** The γάρ of the following sentence seems to show that this identification of νοῦς and ψυχή is A.'s inference from the fact that Anaxagoras declared νοῦς to be everywhere present in all living things. He cannot have meant ὁ κατὰ φρόνησιν λεγόμενος νοῦς; he must therefore have meant what A. calls ψυχή.

b 3. **ἐν ἅπασι γὰρ ὑπάρχειν αὐτὸν τοῖς ζῴοις.** αὐτὸν = τὸν νοῦν. See *frag.* 12 D καὶ ὅσα...πάντων νοῦς κρατεῖ (cited above *n.* on 406 b 1 **περὶ αὐτῶν**). But in this fragment it is not clear that κρατεῖ bears out A.'s ὑπάρχειν, in other words, whether, according to Anaxagoras, the intelligence which rules all animate beings is, or is not, immanent: in 429 a 19 A. himself glosses ἵνα κρατῇ by ἵνα γνωρίζῃ.

b 5 **οὐ φαίνεται...6 τοῖς ζῴοις.** This is one of the premisses from which the conclusion is drawn that Anaxagoras uses νοῦς in the sense of ψυχή. By φαίνεσθαι an appeal to the facts is introduced. Cf. 403 a 5 *note*, 414 a 24 καίπερ οὐδὲ φαινομένου, *De Cael.* II. 13, 294 b 4 νῦν δ' οὐ φαίνεται τοῦτο γιγνόμενον. In **ὁ κατὰ φρόνησιν νοῦς**, the preposition has a determining sense, cf. 417 b 9 τὸ μὲν οὖν εἰς ἐντελέχειαν ἄγον ἐκ δυνάμει ὄντος κατὰ τὸ νοοῦν καὶ φρονοῦν, 412 b 10 sq. οὐσία ἡ κατὰ τὸν λόγον: also such common phrases as κατ' ἀριθμὸν ἕν, κατὰ δύναμιν, κατ' ἐνέργειαν, κατά τι (as opposed to ἁπλῶς or ὅλως), καθ' αὑτό, κατὰ συμβεβηκός. That φρονεῖν, φρόνησις as more precise should be used to define νοεῖν, νοῦς may appear surprising: see, however, 427 a 17—27 where the two terms are used indifferently, 427 b 8 τὸ νοεῖν, ἐν ᾧ ἐστὶ...φρόνησις, καὶ ἐπιστήμη καὶ δόξα ἀληθής, 429 a 10 ᾧ [sc. τῷ νῷ] γινώσκει τε ἡ ψυχὴ καὶ φρονεῖ. The statement of our text that νοῦς is something rare and exceptional if we look at the animal world as a whole recurs in 415 a 7—11, 427 b 8.

404 b 8—405 b 10. The other view, which regards soul as that which perceives and knows, identifies soul with the constituent elements of things perceived or known (i.e. of the universe), because like is known by like. Thus Empedocles (§ 6), Plato in the *Timaeus*, in Τὰ περὶ φιλοσοφίας and elsewhere (§ 7). Others [i.e. Xenocrates], combining motion and perception, have defined the soul as a self-moving number (§ 8). We have thus classed together philosophers whose views as to the nature and number of the constituent elements of things are widely different, some considering them as corporeal,

others as incorporeal (§ 9), some admitting but one ultimate principle, others a plurality. But the view taken of the soul and the view taken of the universe will be found to agree (§ 10). This agreement is exemplified in Democritus (§§ 11, 12). The views of Anaxagoras (§ 13), Thales (§ 14), Diogenes of Apollonia (§ 15), Heraclitus (§ 16), Alcmaeon (§ 17), Hippon (§ 18), Critias (§ 19) are briefly stated.

b 8. ὅσοι δ' ἐπὶ τὸ γινώσκειν καὶ τὸ αἰσθάνεσθαι τῶν ὄντων, sc. *ἀπέβλεψαν*. Here A. passes from the conception of soul as moving principle to the conception of soul as cognitive or perceptive.

b 9. οὗτοι δέ. Note the resumption after *οὗτοι* of the *δὲ* already expressed at b 8, *ὅσοι δέ*, and cf. *Ind. Ar.* 166 b 58 ubi demonstrativa enunciatio sequitur relativam, non raro particula *δὲ* relativo addita iteratur apud pronomen (adiectivum, adverbium) demonstrativum: *De Gen. et Corr.* I. 1, 314 a 8 *ὅσοι **μὲν** ἓν τι τὸ πᾶν λέγουσιν εἶναι...τούτοις **μὲν** ἀνάγκη...ὅσοι **δὲ** πλείω τὴν ὕλην ἑνὸς τιθέασιν...τούτοις **δὲ** ἕτερον.*

b 10. οἱ μὲν πλείους ποιοῦντες [ταύτας], οἱ δὲ μίαν ταύτην. I follow Bek., Trend., Torst., Diels in bracketing *ταύτας*, which is omitted in E. The other authorities vary. See *critical notes*. M. Rodier who retains *ταύτας* rightly, on his view, places a comma before the word and another before b 11 *ταύτην*, thus making the text a condensed expression for *οἱ μὲν πλείους τὰς ἀρχὰς ποιοῦντες ταύτας εἶναι τὴν ψυχήν, οἱ δὲ μίαν τὴν ἀρχὴν ποιοῦντες ταύτην εἶναι τὴν ψυχὴν λέγουσιν*. But, though this is unambiguously expressed later on (405 b 17—19), it is not necessary to anticipate it here.

b 11. ὥσπερ Ἐμπεδοκλῆς μὲν ἐκ τῶν στοιχείων πάντων, sc. *λέγει τὴν ψυχὴν εἶναι*. By *τὰ στοιχεῖα πάντα* are meant the four so-called elements or *σώματα ἁπλᾶ* of A., earth, water, air (= *αἰθὴρ* of Empedocles), and fire, as well as the two moving forces, attraction and repulsion, personified as Love and Strife. As Zeller shows (*Pre-Socratics*, Eng. Tr. II. pp. 167 sqq.) this is A.'s inference and involves a misconception: "A. concludes in his usual manner that according to Empedocles the soul is composed of all the four elements, an assertion which is then repeated by his commentators. It is, however, incorrect. Empedocles did not hold that the soul is composed of the elements: but what we call the activity of the soul he explained by the elementary composition of the body; a soul distinct from the body he did not assume. Thought, like all other vital activities, arises from and depends upon the admixture of substances in the body....It is in the blood especially, because there the elements are most completely mingled, that thought and consciousness have their chief seat, and particularly in the blood of the heart [*frag.* 105, 3 D]. But other parts of the body are not excluded from participation in thought, provided the elementary particles are tightly compressed and mixture is homogeneous. If the right admixture is limited to certain parts, the result is sense-organs with their special endowment." What Empedocles meant is best seen in the case of the special senses. As our sense-organs are composed of the very same elements as the objects outside the organism, knowledge of these objects is obtained through these organs. Thus the fire in the eye enables us to see fire, and so on.

b 12. εἶναι δὲ καὶ ἕκαστον ψυχὴν τούτων. This also is A.'s inference. If soul is compounded of the elements and a part of each element enters into its composition, then, in virtue of being such part, any one of the elements may be said to be a soul. *De Gen. et Corr.* II. 6, 334 a 9 *ἄτοπον δὲ καὶ εἰ ἡ ψυχὴ ἐκ τῶν στοιχείων ἢ ἕν τι αὐτῶν.* A. is there dealing with Empedocles and continues 334 a 10 *αἱ γὰρ ἀλλοιώσεις αἱ τῆς ψυχῆς πῶς ἔσονται, οἷον τὸ μουσικὸν εἶναι καὶ πάλιν ἄμουσον, ἢ μνήμη ἢ λήθη; δῆλον γὰρ ὅτι εἰ μὲν πῦρ ἡ ψυχή, τὰ πάθη ὑπάρξει*

αὐτῇ ὅσα πυρὶ ᾗ πῦρ· εἰ δὲ μικτόν, τὰ σωματικά· τούτων δ' [i.e. the *ἀλλοιώσεις, τὸ μουσικὸν εἶναι καὶ πάλιν ἄμουσον ἢ μνήμη ἢ λήθη*] *οὐδὲν σωματικόν.* In the latter case, the properties of the compound may be different from those of the constituents, although still of course properties of a corporeal substance. Cf. Zeller, *op. cit.* p. 137, *n.* 1. The inference is virtually repeated 410 b 2 sq., 7—10 and, as Simpl. remarks, it rests on the assumption already formulated by A. that "that by which we know anything whatever is soul" (27, 36) *οὐ μόνον τὸ ἐκ πασῶν μῖγμα ψυχὴν λέγοντα, ἀλλὰ καὶ ἑκάστην ἀρχὴν γνωστικὴν οὖσαν τοῦ ὁμοίου· τὸ γὰρ γνωστικὸν ὁτουοῦν ψυχὴν εἶναι.*

b 13 γαίῃ μὲν γάρ...15 λυγρῷ. *Frag.* 109 D (ll. 321—323 K) cited also in *Metaph.* 1000 b 6 sqq. and by later writers, e.g. Sext. Emp. *Adv. Math.* I. 303, VII. 92, 121 with *ἀήρ* substituted for *αἰθήρ* in the first citation.

b 16. τὸν αὐτὸν δὲ τρόπον...ἐν τῷ Τιμαίῳ. The reference is to the **Ψυχογονία** in *Timaeus* 34 C sqq.

b 17. γινώσκεσθαι γὰρ τῷ ὁμοίῳ τὸ ὅμοιον. That like is known by like is the assumption underlying the language of *Tim.* 37 A—C where Plato accounts for the generation of "sure opinions and true beliefs" (*δόξαι καὶ πίστεις βέβαιοι καὶ ἀληθεῖς*) as well as of *νοῦς* and *ἐπιστήμη*. Plato with his immaterial principles gives a wholly original application to the maxim 'like is known by like.' Here he stands quite apart from all his predecessors, although no doubt in his theory of vision (*Tim.* 45 B—46 C) he followed Empedocles.

b 17. ἐκ τῶν στοιχείων. In our context *στοιχεῖα* and *ἀρχαὶ* are synonymous terms, and we might fairly infer that this was so in the latest speculations of Plato and in those of his immediate followers. A. expressly asserts this of those who held the ideas to be numbers, *Metaph.* 1087 b 12 *τὰς ἀρχὰς ἃς στοιχεῖα καλοῦσιν.* Cf. 1086 b 37—1087 a 4.

b 18. τὰ δὲ πράγματα ἐκ τῶν ἀρχῶν εἶναι. What are here called *πράγματα* are to Plato *γιγνόμενα*, though he also, as well as A., sometimes calls them *ὄντα*. As to the principles from which "things" or phenomena are derived, see *Tim.* 27 D sqq.: ideas are the causes of phenomena, of the entire sensible universe with all things included therein.

b 19. ἐν τοῖς περὶ φιλοσοφίας λεγομένοις. The form of this reference would suggest a treatise entitled Περὶ *φιλοσοφίας*. But our authorities inform us that certain oral lectures of Plato's are intended, of which A. and possibly other disciples of Plato had made summaries or compendia (cf. Heitz, *Die verlorenen Schriften des A.* pp. 180, 211). In *Phys.* II. 2. 194 a 36 *εἴρηται δ' ἐν τοῖς περὶ φιλοσοφίας* the reference, on the other hand, is to a dialogue written by A. himself. **διωρίσθη.** With what follows cf. *Metaph.* 1090 b 20—24.

b 19. αὐτὸ μὲν τὸ ζῷον, sc. the universe, which is explicitly termed a "living thing" or "organism" (*ζῷον*) in the *Timaeus* (cf. e.g. 30 B *τόνδε τὸν κόσμον ζῷον ἔμψυχον ἔννουν τε*, and many other passages). Cf. Them. 12, 1 H., 21, 10 Sp. *τὸ μὲν οὖν αὐτοζῷον, τουτέστι τὸν κόσμον τὸν νοητόν, ἐκ τῶν πρώτων ἐποίουν ἀρχῶν, τὰ δὲ ἐπὶ μέρους* [sc. *ζῷα*] *ἐκ τῶν ὑφειμένων· ὥσπερ γὰρ τὰ αἰσθητὰ ἔχει πρὸς ἄλληλα, οὕτω καὶ τὰς ἰδέας αὐτῶν πρὸς ἀλλήλας ἔχειν.*

b 20. τῆς τοῦ ἑνὸς ἰδέας, the idea of the One. In Greek mathematics one, though an *ἀρχὴ ἀριθμῶν*, is not itself a number (*Metaph.* 1088 a 4—8): *τὸ ἓν καὶ οἱ ἀριθμοὶ* is a stereotyped phrase. **τοῦ πρώτου μήκους.** The idea-number Two: as Three is the *πρῶτον πλάτος* and Four the *πρῶτον βάθος*. In this phase of Platonism the attempt was made to derive the three dimensions of space from the idea-numbers Two, Three and Four. *Metaph.* 992 a 10 sqq.: cf. 992 b 13 sqq., 1085 a 7 sqq., and, most explicitly, 1090 b 21 *ποιοῦσι γὰρ* [sc. *οἱ τὰς ἰδέας τιθέμενοι*] *τὰ μεγέθη ἐκ τῆς ὕλης καὶ ἀριθμοῦ, ἐκ μὲν τῆς*

δυάδος τὰ μήκη, ἐκ τριάδος δ' ἴσως τὰ ἐπίπεδα, ἐκ δὲ τῆς τετράδος τὰ στερεὰ ἢ καὶ ἐξ ἄλλων ἀριθμῶν. Them. 11, 30 H., 20, 26 Sp. ἐπειδὴ γὰρ ἐν τῷ νοητῷ κόσμῳ δεῖ πάντως τὰς ἀρχὰς παρεμφαίνεσθαι τοῦ αἰσθητοῦ, ὁ δὲ αἰσθητὸς ἐκ μήκους ἤδη καὶ πλάτους καὶ βάθους, τοῦ μὲν μήκους ἰδέαν εἶναι τὴν πρώτην ἀπεφήναντο δυάδα· ἀπὸ γὰρ ἑνὸς ἐφ' ἓν τὸ μῆκος, τουτέστιν ἀπὸ σημείου ἐπὶ σημεῖον· τοῦ δὲ μήκους ἅμα καὶ πλάτους τὴν πρώτην τριάδα· πρῶτον γὰρ τῶν ἐπιπέδων σχημάτων ἐστὶ τὸ τρίγωνον. Cf. *Metaph.* 1036 b 13 καὶ τῶν τὰς ἰδέας λεγόντων οἱ μὲν αὐτογραμμὴν τὴν δυάδα, οἱ δὲ τὸ εἶδος τῆς γραμμῆς· ἔνια μὲν γὰρ εἶναι ταὐτὰ τὸ εἶδος καὶ οὗ τὸ εἶδος, οἷον δυάδα καὶ τὸ εἶδος δυάδος· ἐπὶ γραμμῆς δ' οὐκέτι. Duality is assumed by A. as an equivalent for the formal cause of the straight line 429 b 20 ἔστω γὰρ δυάς [sc. τὸ εὐθεῖ εἶναι].

b 21. τὰ δ' ἄλλα. If we may follow *Timaeus* 30 C, D these will be the genera and species of living things included in the universe οὗ δ' ἔστι τἆλλα ζῷα καθ' ἓν καὶ κατὰ γένη μόρια, τούτῳ πάντων ὁμοιότατον αὐτὸν εἶναι τιθῶμεν. τὰ γὰρ δὴ νοητὰ ζῷα πάντα ἐκεῖνο ἐν ἑαυτῷ περιλαβὸν ἔχει, καθάπερ ὅδε ὁ κόσμος ἡμᾶς ὅσα τε ἄλλα θρέμματα ξυνέστηκεν ὁρατά. Them. 12, 1 H., 21, 10 Sp. τὸ μὲν οὖν αὐτοζῷον...ἔχειν [cited above in note on b 19 αὐτὸ μὲν τὸ ζῷον].

b 21. ἔτι δὲ καὶ ἄλλως: τὸν αὐτὸν δὴ τοῦτον λόγον μετῄεσαν is the supplement of Them. (12, 5 H., 21, 14 Sp.). The world of objects which the soul knows having been derived from idea-numbers it remained to show that the faculties which soul is assumed to employ for apprehending these objects admit of a similar deduction, in other words that soul has νοῦς in it from the idea of Unity, ἐπιστήμη from the idea-number Two, δόξα from Three, Sense-perception from Four. The soul which knows, as well as the things which are known, is ultimately constituted by idea-numbers. Mr Shorey (*A. J. Ph.* XXII. 152) protests against associating these 'fooleries of Xenocrates,' as he calls them, with the teaching of Plato himself.

b 22. μοναχῶς. Philop. 79, 26 glosses μοναχῶς by οὐκ ἄλλοτε ἄλλως. In Euclid's language there can only be *one* straight line between any two points: in other words, from any point there is only *one* way of going to any other single point (ἐφ' ἕν), Them. 11, 33 H., 21, 2 Sp. ἀπὸ γὰρ ἑνὸς ἐφ' ἓν τὸ μῆκος, τουτέστιν ἀπὸ σημείου ἐπὶ σημεῖον as already cited on b 20 *supra*, *ib.* 12, 8 H., 21, 18 Sp. τὴν δὲ ἐπιστήμην ἐκ τῆς πρώτης δυάδος [sc. τὴν ψυχὴν ἔχειν διωρίζοντο]· ἀφ' ἑνὸς γὰρ ἐφ' ἓν καὶ ἡ ἐπιστήμη, ἀπὸ γὰρ τῶν προτάσεων ἐπὶ τὸ συμπέρασμα. Cf. 407 a 26—9.

b 23. τὸν δὲ τοῦ ἐπιπέδου ἀριθμὸν δόξαν. Cf. Them. 12, 9 H., 21, 21 Sp. τὴν δόξαν δὲ ἐκ τῆς πρώτης τριάδος, ὅσος ἦν καὶ τοῦ ἐπιπέδου ἀριθμός. According to Them. (12, 10 H., 21, 22 Sp.) this was because the triangle is the first, or most elementary of plane figures: τῆς γὰρ δόξης ἤδη καὶ τὸ ἀληθὲς καὶ τὸ ψεῦδος ἐκ τῶν προτάσεων. So Philop. 79, 28 sqq. τὸν δὲ τρία ἀριθμὸν τῇ δόξῃ ἀπένειμεν· οὐ γὰρ μοναχῶς ἡ δόξα γίνεται ὥσπερ ἡ ἐπιστήμη· ἔστι γὰρ καὶ ἀληθὴς δόξα καὶ ψευδής, ἐπιστήμη δὲ πᾶσα ἀληθής.

b 23. αἴσθησιν δὲ τὸν τοῦ στερεοῦ. Cf. Them. 12, 11 H., 21, 24 Sp. αἴσθησιν δὲ ἀπὸ τῆς πρώτης τετράδος ἐξ ἧς καὶ ἡ τοῦ στερεοῦ σώματος ἰδέα· περὶ γὰρ τὸ τοιοῦτον σῶμα ἡ αἴσθησις. At first this explanation seems strangely out of keeping with what precedes. But a clue to its meaning and at the same time a proof of its correctness is furnished by *Laws* 894 A. Plato asks, "What are the conditions of all becoming?" and replies δῆλον, ὡς ὁπόταν ἀρχὴ λαβοῦσα αὔξην εἰς τὴν δευτέραν ἔλθῃ μετάβασιν καὶ ἀπὸ ταύτης εἰς τὴν πλησίον, καὶ μέχρι τριῶν ἐλθοῦσα αἴσθησιν σχῇ τοῖς αἰσθανομένοις. μεταβάλλον μὲν οὖν οὕτω καὶ μετακινούμενον γίγνεται πᾶν· ἔστι δὲ ὄντως ὄν, ὁπόταν μένῃ· μεταβαλὸν δὲ εἰς ἄλλην ἕξιν διέφθαρται παντελῶς. The mathematical character of the language

would be apparent even if A. had not told us that Plato eschewed the term "point" and preferred to speak of "origin of a line," ἀρχὴ γραμμῆς (*Metaph.* 992 a 21), just as modern geometry calls a point the "origin" of coordinates. The point, receiving increase, grows or developes into the line, the second stage or μετάβασις; from that it passes to the next stage, for a line by its motion generates a superficies (409 a 4 sq.): by the fourth stage it reaches three dimensions and is perceptible to sense. Here, as in *Tim.* 53 C—57 D, Plato substitutes a mathematical deduction of body for a physical deduction. The world of becoming is a fleeting show, a phantasmagoria: all the reality in which it shares is derived from its πέρατα, point, line, surface and solid (*Metaph.* 1028 b 16 sqq.). By what arguments this conclusion was recommended may still be seen in *Metaph.* 1001 b 26—1002 a 14. Cf. also *Metaph.* 1089 a 31 sqq. φαίνεται δὲ ἡ ζήτησις πῶς πολλὰ τὸ ὂν τὸ κατὰ τὰς οὐσίας λεγόμενον· ἀριθμοὶ γὰρ καὶ μήκη καὶ σώματα τὰ γεννώμενά ἐστιν. Bonitz in his commentary (p. 576) assumes that Plato is here criticised. How much of the views criticised in *Metaph.* M., cc. 6—10, N., cc. 1—6 belongs to Plato himself, how much to his school, it is very hard to determine.

b 24 οἱ μὲν γὰρ...25 ἐκ τῶν στοιχείων. Cf. *Metaph.* 1078 b 9—12, 1080 a 12—14, where it is implied that in Plato's teaching there was first a period in which the ideas were quite distinct from numbers, and later a period in which they were presented as virtually numbers. Of this later phase there is apparently no trace in the extant dialogues. The subject of εἰσὶ is still οἱ ἀριθμοί. We might paraphrase thus: The numbers were affirmed to be just what the ideas had (always) been, and, whereas other philosophers had chosen material principles as principles of all existence, Plato made them numbers, only they were not ultimate, but were themselves constituted of component elements (στοιχεῖα). This phase of Platonism, in which the idea is a number and at the same time, as an idea, the cause of being for particulars is attested *Metaph.* 1090 a 5 εἴπερ ἕκαστος τῶν ἀριθμῶν ἰδέα τις, ἡ δ' ἰδέα τοῖς ἄλλοις αἰτία τοῦ εἶναι ὃν δή ποτε τρόπον· ἔστω γὰρ ὑποκείμενον αὐτοῖς τοῦτο. A. himself admits there the efficiency of the ideas as causes on this view (*ib.* a 4) τῷ μὲν γὰρ ἰδέας τιθεμένῳ παρέχονταί τιν' αἰτίαν τοῖς οὖσιν. This is probably an exaltation of Plato at the expense of Xenocrates, who is the object of the polemic 1090 a 7—15. A. usually mentions two στοιχεῖα of idea-numbers. The first is always unity, the second, the μὴ ἕν (*Metaph.* 1001 b 23), is variously called the indeterminate or the unequal two, ἀόριστος δυάς (*Metaph.* 1081 a 14 sq.), ἄνισος δυάς or ἄνισον (*Metaph.* 1087 b 5, 7, 11, 1089 b 10 sqq.), appearing sometimes as great-and-small, sometimes as much-and-little etc. according as magnitude or number is the product. By these elements or ultimate causes of the ideas or idea-numbers, however designated, we may understand unity and plurality: *Metaph.* 1001 b 19 ἀλλὰ μὴν καὶ εἴ τις οὕτως ὑπολαμβάνει ὥστε γενέσθαι, καθάπερ λέγουσί τινες, ἐκ τοῦ ἑνὸς αὐτοῦ καὶ ἄλλου μὴ ἑνός τινος τὸν ἀριθμόν, οὐδὲν ἧττον ζητητέον διὰ τί καὶ πῶς ὁτὲ μὲν ἀριθμὸς ὁτὲ δὲ μέγεθος ἔσται τὸ γενόμενον, εἴπερ τὸ μὴ ἓν ἡ ἀνισότης καὶ ἡ αὐτὴ φύσις ἦν. One consequence of assuming elements from which the idea-numbers were derived did not escape criticism: being derived, the idea-numbers are posterior to the elements from which they are derived, and A. objects that there are entities ἃ μᾶλλον βούλονται εἶναι...τοῦ τὰς ἰδέας εἶναι: cf. *Metaph.* 1079 a 14—19, 990 b 17—22.

b 25. κρίνεται δὲ τὰ πράγματα. This distinction of four faculties correlating with four classes of object is found in slightly varying forms in several Platonic dialogues. In the *Republic* 509 E—511 E the main division is into νοητὰ and ὁρατὰ and thus the former are divided into objects of pure reason (νόησις) and

objects of understanding (διάνοια), while things visible or, more comprehensively, sensible objects, are subdivided into objects of belief (πίστις) and objects of conjecture (εἰκασία): where, however, πίστις and εἰκασία seem to be but species of δόξα. Thus in the *Republic* at any rate the spheres of opinion (δόξα) and sense-perception (αἴσθησις) are not regarded as mutually exclusive. When we get to the *Timaeus* we have again, first, a dual division of objects (51 B sqq.), intelligible realities and sensible phenomena, inferred from the irreconcilable distinction between νοῦς and δόξα ἀληθής. The latter class of objects, sensibles, are in the same passage (52 A), however, described as apprehended by opinion with the help of sense-perception (δόξῃ μετ' αἰσθήσεως). And in 37 B, C we have apparently the full fourfold division of faculties νοῦς...ἐπιστήμη τε...δόξαι καὶ πίστεις.

b 27. εἴδη δ'...τῶν πραγμάτων, "forms of things," in A.'s technical sense of εἶδος. A. adds this remark in order to make clearer the nature of the numbers first introduced in b 20 sqq.: hence οὗτοι, "with which we have been dealing in this account of the Platonic views." It adds nothing to the previous remark b 24 οἱ μὲν γὰρ ἀριθμοὶ τὰ εἴδη αὐτὰ καὶ αἱ ἀρχαὶ ἐλέγοντο, except that τῶν πραγμάτων is appended to εἴδη. It seems unlikely at first sight that A. should describe the idea-numbers in the terms of his own system as forms of things. But, if we give εἴδη the Platonic sense, it is misleading to speak of "ideas of things" without qualification. It is true that in *Metaph.* 987 b 7, 1078 b 31, τὰ τοιαῦτα τῶν ὄντων ἰδέας προσηγόρευσε, Bonitz joins τῶν ὄντων with ἰδέας, but he does so without warrant from Alex. Aphr. and τὰ τοιαῦτα is more naturally taken with τῶν ὄντων. The more correct phrase πάντων ἰδέας εἶναι τῶν καθόλου λεγομένων occurs *Metaph.* 1078 b 33. Cf. 990 b 7, 12. Them., however, has no scruple in writing (11, 27 H., 20, 20 Sp.) εἴδη τῶν ὄντων and even (12, 3 H., 21, 13 Sp.) τὰς ἰδέας αὐτῶν [sc. τῶν αἰσθητῶν].

b 27 ἐπεὶ δὲ...28 γνωριστικὸν οὕτως. With this punctuation οὕτως = τῷ ἐκ τῶν στοιχείων εἶναι, so that it limits the sense of γνωριστικόν. Torstrik cites for a similar use of οὕτως *Metaph.* 1053 a 13 καὶ ταῦτα πάντα ἕν τι οὕτως, οὐχ ὡς κοινόν τι τὸ ἕν, ἀλλ' ὥσπερ εἴρηται. The punctuation of οὕτως 1051 b 35, where Bekker put the comma before, and Christ after, οὕτως, presents a similar problem. Cf. Maier, *Syllogistik* I. p. 20, n. 2.

b 28. ἔνιοι, namely Xenocrates: cf. *infr.* 408 b 32 sqq.: quum substantia eorum quae sunt numerus sit, cognoscatur vero simile simili, cognoscat vero anima, sequitur ut anima numerus sit (Torst. p. 117).

b 30. διαφέρονται δέ. Thus under the conception of soul as cognitive and therefore related to the principles of things are collected philosophers as dissimilar as Empedocles and Plato. While they agree in reducing the soul to elements or principles they are not agreed on the fundamental question what these elements or principles are and how many of them must be assumed.

b 31. τοὺς ἀσωμάτους, int. ποιοῦσι.

405 a 1. τούτοις, int. διαφέρονται. **ἀπ' ἀμφοῖν**, i.e. from both corporeal and incorporeal principles. Empedocles and Anaxagoras are instanced by Simpl. (30, 30) and Philop. (82, 20), who consider the Intelligence of the latter, as well as the Love and Strife of the former, to be incorporeal.

a 3. ἑπομένως δὲ τούτοις, conformably with these various assumptions, i.e. the assumptions made by each philosopher as to the nature and number of the principles of things. Their view of the soul was coloured by their view of the universe; the ἀρχαὶ and στοιχεῖα of the one correspond to the ἀρχαὶ and στοιχεῖα of the other. A. implies that this correspondence holds, not only when cognition is taken to be the primary characteristic of soul, but quite as much when soul is regarded, e.g. by Democritus, as the moving principle.

a 4. τό τε γὰρ κινητικὸν τὴν φύσιν τῶν πρώτων ὑπειλήφασιν. With Bonitz (*Hermes* VII. p. 419 sqq.) join τῶν πρώτων which is a partitive genitive with τὸ κινητικόν and supply after ὑπειλήφασιν τὴν ψυχὴν or τὴν ψυχὴν εἶναι. By τὸ κινητικὸν τὴν φύσιν τῶν πρώτων is meant ἐκεῖνο τῶν πρώτων ὅ ἐστι κινητικὸν τὴν φύσιν : they conceived the soul to be that amongst first principles or primary elements which is by its nature capable of causing motion, i.e. they too, as well as those who explained the soul from cognition, assumed the soul to be the one element or one of the elements of things : they selected an element by its nature adapted to produce motion, and declared soul to be that element. The elements of the early philosophers, their πρῶτα or ἀρχαί, corresponded more or less exactly to A.'s material cause. But sometimes a distinction was drawn between some elements which were inert, and one (or more) which was active and able to move the rest. The best commentary is furnished by *Metaph.* 984 b 1 where, as here, A. is dealing with the early philosophers, whether they assumed a single first principle or a plurality, and remarking the scarcely discernible trace of a motive cause in such systems τῶν μὲν οὖν ἓν φασκόντων εἶναι τὸ πᾶν οὐδενὶ συνέβη τὴν τοιαύτην [int. τὴν ἑτέραν ἀρχὴν ὡς ἂν ἡμεῖς φαίημεν, ὅθεν ἡ ἀρχὴ τῆς κινήσεως] συνιδεῖν αἰτίαν, πλὴν εἰ ἄρα Παρμενίδῃ [in τὰ πρὸς δόξαν, where he apparently admits two principles]...(b 5) τοῖς δὲ δὴ πλείω ποιοῦσι μᾶλλον ἐνδέχεται λέγειν, οἷον τοῖς θερμὸν καὶ ψυχρὸν ἢ πῦρ καὶ γῆν· χρῶνται γὰρ ὡς κινητικὴν ἔχοντι τῷ πυρὶ τὴν φύσιν, ὕδατι δὲ καὶ γῇ καὶ τοῖς τοιούτοις τοὐναντίον. Cf. 983 b 7 sqq.

An alternative would be to take τῶν πρώτων as predicate with ὑπειλήφασιν, by the same construction as that of τῶν καλῶν (402 a 1): and so the Greek commentators. "They supposed that what in its own nature is capable of causing motion is one of the primary causes." If the words are so taken, then, since they regarded the soul as capable by its own nature of causing motion, it follows that the soul is one of the primary causes: Them. (13, 7 H., 23, 15 Sp.) εὔλογον γὰρ καὶ λίαν πιθανὸν τὴν κινητικωτάτην αἰτίαν ἐν ταῖς πρώταις ἀρχαῖς κατατάττειν. Cf. Philop. 82, 36 and Simpl. 30, 33 sqq. Bonitz objects that it is the ἀρχή which determines what the soul is, and not the soul which determines what the ἀρχή shall be (405 a 3 ἑπομένως τούτοις). This is clear from the parallel case of those who explained the soul as cognitive. Quite apart from this, the passage cited from *Metaph.* 984 b 1 sqq. seems conclusive as against such a recognition of the moving principle, at any rate by the earlier Ionian philosophers, who nevertheless are subsequently adduced as considering soul from the side of motivity, e.g. Thales, Diogenes, Heraclitus. By τῶν πρώτων we are to understand the first causes (αἴτια) or principles (ἀρχαί) or elements (στοιχεῖα) which the philosophers in question assumed, and these, as we have seen above, were generally what A. calls material causes, e.g. the atoms are τὰ πρῶτα of Democritus, cf. *Meteor.* I. 1. 338 a 20 τὰ πρῶτα αἴτια τῆς φύσεως, *Phys.* VIII. 9, 265 b 27 τῶν δ' ἄλλων (sc. κινήσεων) οὐδεμίαν ὑπάρχειν τοῖς πρώτοις ἀλλὰ τοῖς ἐκ τούτων οἴονται, *Metaph.* 982 a 26 ἐπιστῆμαι αἳ μάλιστα τῶν πρώτων εἰσίν, *Anal. Post.* I. 2, 72 a 6 ταὐτὸ γὰρ λέγω πρῶτον καὶ ἀρχήν, *Top.* IV. 1, 121 b 9 ἥ τε γὰρ ἀρχὴ πρῶτον καὶ τὸ πρῶτον ἀρχή, *Metaph.* 1013 a 2 ἀπὸ τοῦ πρώτου καὶ τῆς τοῦ πράγματος ἀρχῆς. Lastly, as to τε γάρ, it is probable that this should be added to the passages in A. where τε γάρ = etenim. See Shilleto Dem. *De Falsa Leg.* § 176. *Ind. Ar.* 750 a 13 relinquuntur certe loci quidam, in quibus coniunctis particulis τε γάρ non aliam apparet vim inesse quam simplici γάρ vel καὶ γάρ veluti *Pol.* 1333 a 2, 1318 b 32 sqq., *Post. Anal.* I. 9, 75 b 41, *De Part. An.* III. 1, 661 b 28. Cf. Bz. *Ztschr. f. öst. Gym.* 1867, pp. 672—682.

a 5. ὅθεν. This must go back to a 3 ἑπομένως δὲ τούτοις. The general

agreement between the choice of ἀρχαὶ and the explanation of soul applies particularly in the case of fire. In *Metaph.* A., c. 8, Aristotle is criticising those who assumed a single material principle, corporeal and extended, 988 b 22 ὅσοι μὲν οὖν ἕν τε τὸ πᾶν καὶ μίαν τινὰ φύσιν ὡς ὕλην τιθέασι, καὶ ταύτην σωματικὴν καὶ μέγεθος ἔχουσαν. He remarks that the transformation of the ἁπλᾶ σώματα may be regarded as the effect either of σύγκρισις or of διάκρισις. The former view requires in strict consistency that fire as being μικρομερέστατον and λεπτότατον should be taken for the primary element, 988 b 32 τὰ μὲν γὰρ [sc. τῶν ἁπλῶν σωμάτων] συγκρίσει, τὰ δὲ διακρίσει ἐξ ἀλλήλων γίγνεται, τοῦτο δὲ πρὸς τὸ πρότερον εἶναι καὶ ὕστερον διαφέρει πλεῖστον. τῇ μὲν γὰρ ἂν δόξειε στοιχειωδέστατον εἶναι πάντων ἐξ οὗ γίγνονται συγκρίσει πρώτου, τοιοῦτον δὲ τὸ μικρομερέστατον καὶ λεπτότατον ἂν εἴη τῶν σωμάτων. διόπερ ὅσοι πῦρ ἀρχὴν τιθέασι μάλιστα ὁμολογουμένως ἂν τῷ λόγῳ τούτῳ λέγοιεν. **πῦρ εἶναι**, int. τὴν ψυχήν.

a 6 λεπτομερέστατόν τε καὶ...7 ἀσώματον, int. ἐστίν. Καὶ explicative. A. cannot mean that fire is incorporeal absolutely or in the strict sense of the term, but only that it is so relatively to the other three ἁπλᾶ σώματα air, water and earth. The same meaning must be given to 405 a 7 ἀσώματον, 405 b 12 ἀσωμάτῳ and 409 b 21 τὸ ἀσωματώτατον τῶν ἄλλων. Cf. Philop. 83, 27 ἀσώματον δὲ εἶπε τὸ πῦρ, οὐ κυρίως ἀσώματον (οὐδεὶς γὰρ αὐτῶν τοῦτο ἔλεγε), ἀλλ' ὡς ἐν σώμασιν ἀσώματον [fort. leg. ὂν] διὰ λεπτομέρειαν.

a 7. ἔτι δὲ κινεῖταί τε καὶ κινεῖ τὰ ἄλλα πρώτως. Not only is fire the element most suitable for ἀρχὴ or material principle, if we put ourselves in the position of the early philosophers accepting their presuppositions and the explanation of γένεσις by σύγκρισις: it further appears (ἔτι) that fire satisfies the condition laid down above (403 b 29) καὶ μάλιστα καὶ πρώτως ψυχὴν εἶναι τὸ κινοῦν, which, as we there saw, under the same presuppositions involved the assumption τῶν κινουμένων τι τὴν ψυχὴν εἶναι. For πρώτως see on 403 b 29.

a 8. γλαφυρωτέρως. The term implies praise (Philop. 84, 9). It is used of Charondas *Pol.* 1274 b 8 Χαρώνδας τῇ ἀκριβείᾳ τῶν νόμων ἐστὶ γλαφυρώτερος καὶ τῶν νῦν νομοθετῶν, and the Cretan constitution is said to be "less neatly finished" than that of Sparta 1271 b 21 ἧττον γλαφυρῶς ἔχει, for which cf. 1271 b 24 ἧττον διήρθρωται: *De Part. An.* II. 4. 650 b 18 συμβαίνει δ' ἐνιά γε καὶ γλαφυρωτέραν ἔχειν τὴν διάνοιαν τῶν τοιούτων, in certain animals intelligence attains a more finished perfection. A. was fully alive to the relative superiority of Democritus so far as purely physical explanations are concerned. Cf. *De Gen. et Corr.* I. 2, 315 a 34—b 1, 316 a 5 sqq., 325 a 28. In Zeller's words "he explained all phenomena in a strictly scientific manner from the same principles." Cf. Dyroff, *op. cit.*, p. 79, pp. 116—122.

a 9. διὰ τί τούτων ἑκάτερον, int. συμβέβηκεν (as in 413 b 10): why the soul (1) is λεπτομερέστατον and (2) κινεῖταί τε καὶ κινεῖ. The common view that the power to impart motion implies mobility (cf. 403 b 29) was shared by the Atomists (404 a 7—9), so that these two attributes need not be separated: but the fineness of the texture or structure of a body has a limit in the indivisibility of the atoms of which it is composed. This I take to be the point of the words a 10, τοῦτο δ'...σωμάτων. Having thus proved (1) A. goes on to prove (2), a 10—13 κινητικὸν δὲ...πῦρ. The Greek commentators were divided. Simpl. (31, 8 sqq.) apparently took τούτων to mean τοῦ γνωριστικοῦ καὶ τοῦ κινητικοῦ, a view adopted by Zeller, *Phil. der Griech.* I.[6] p. 902, n. 4. When we find below (405 a 17) that A. himself uses ἄμφω and adds an explanation τό τε γινώσκειν καὶ τὸ κινεῖν, it is natural to explain ἑκάτερον here in the same way, viz., cognition and motivity. But the plain sense of a 9—13 excludes this explanation, nothing being there said of cognition, while both the motive and

mobile qualities of fire and of the soul are there attributed to the minuteness and the spherical shape of the atoms of which they are composed. On the other hand Them. (13, 11 sqq. H., 23, 20 sqq. Sp.) and Philop. (84, 10 sqq.) understand ἑκάτερον to mean simply (1) τὸ κινεῖν and (2) τὸ κινεῖσθαι: and the proof of these attributes is certainly contained in a 9—13. The words of Them. are Δημ. ἑκάτερον...ἐδείκνυ, τὸ μὲν κινεῖν διὰ τὴν σμικρομέρειαν, τὸ δὲ κινεῖσθαι διὰ τὸ σχῆμα· ἄμφω γὰρ οἴεται ὑπάρχειν ταῖς σφαιροειδέσιν ἀτόμοις. But the superiority of Atomism over other physical theories is that it can explain both facts: the finest atoms account for the fineness of a material structure, spherical atoms for mobility and therefore for motive power.

a 10. τοῦτο δ' εἶναι...σωμάτων. The neuter τοῦτο seems influenced by the preceding ταὐτό. Cf. 430 a 23, where the change from masculine to neuter is due to τοῦθ' ὅπερ ἐστί. To insert the preposition ἐκ after εἶναι with some MSS. would, as Torstrik explains, not so well accord with the view expounded 404 a 10—16: nam id quod constat ex elementis, quodammodo diversum est ab iis: elementa enim plura, hoc unum est. At Democritus animam esse voluit potius ipsa rudia elementa nullo unitatis vinculo comprehensa. The atoms are now designated σώματα, above (404 a 2, 7) they were called "shapes" or "figures," and below (406 b 20 sq.) they are called "indivisible spheres."

a 11. λεπτομέρειαν. If this is the genuine reading, we may trace a connexion with the view of Democritus as reported by Theophrastus *De Sensibus* 75 (Diels *Doxogr.* 521, 24), probably in reference to the fusing of metals, that things which are red hot are not so hot as those at a white heat (θερμὸν γὰρ τὸ λεπτόν), the rapid motion of the finest particles thus generating both white colour and intense heat. Philop. 84, 21—85, 16 conjectures that in making spherical atoms μικρομερεστάτας Dem. was guided by the geometrical proposition that of all solids with equal surface the sphere encloses the greatest mass.

a 12. τοιοῦτον, i.q. σφαιροειδές. Cf. 404 a 2, 6.

a 14. πρότερον, viz. 404 b 1—6, where see notes. **χρῆται δ' ἀμφοῖν ὡς μιᾷ φύσει**: ἀμφοῖν refers to ψυχή and νοῦς, which according to 404 b 1—3 Anaxagoras sometimes distinguished, sometimes confused. Here A. virtually admits that Anaxagoras treated them as identical, as two different terms for one and the same objective entity. The word φύσις in A. sometimes denotes vaguely an entity or thing, e.g. *Metaph.* 1052 b 12 πρᾶγμά τι καὶ φύσις. It is used of a faculty in the soul, *Eth. Nic.* 1102 b 13 ἄλλη τις φύσις τῆς ψυχῆς ἄλογος, of A.'s causes, especially the material cause, 983 b 13, 17, 988 b 22, and the final cause 988 b 12, of the category of relation 1089 b 7, 1089 a 13, even of Not-being itself 1089 a 19 ταύτην τὴν φύσιν λέγει τὸ οὐκ ὄν. Sometimes it is almost periphrastically joined with a genitive, e.g. *infr.* 405 b 7 τὴν τοῦ αἵματος φύσιν, the entity which is blood, 416 a 9 ἡ τοῦ πυρὸς φύσις. There is a close parallel to the language here in *Metaph.* 985 a 33 οὐ μὴν χρῆταί γε [sc. Empedocles] τέτταρσιν, ἀλλ' ὡς δυσὶν οὖσι μόνοις, πυρὶ μὲν καθ' αὑτό, τοῖς δ' ἀντικειμένοις ὡς μιᾷ φύσει, γῇ τε καὶ ἀέρι καὶ ὕδατι.

a 15. πλὴν ἀρχήν γε. In his own account of the evolution of the world from chaos Anaxagoras uses the term νοῦς and not ψυχή (as to Plato *Crat.* see note on 404 b 1 *supr.*). From *Metaph.* 984 b 20—22 οἱ μὲν οὖν οὕτως ὑπολαμβάνοντες ...τοῖς οὖσιν it appears that A. regarded this νοῦς of Anaxagoras as at once a final and a moving cause, though at the same time he complains (985 a 18—20) of the inadequate use which Anaxagoras made of his principle.

a 15. μάλιστα πάντων. I take this, with Simpl. 31, 18 and Philop. 85, 34, as a stronger μάλιστα (cf. e.g. *Metaph.* 991 a 8, 1001 a 22 and πάντων ἥκιστα 1088 a 23),

just as παντὸς μᾶλλον is an emphatic μᾶλλον, both expressions being favourites with Attic writers, especially Plato. Themistius, however (13, 16 H., 23, 28 sq. Sp.), gives a different turn to the sentences, paraphrasing thus: ἀρχήν φησι σχεδόν τι τῶν ὄντων ἁπάντων. It is quite easy to see how he reached this interpretation. If νοῦς is described by Anaxagoras as "divisible and as 'inhabiting some things,' i.e. all things which have life," clearly it does not so inhabit all things whatever. Thus Them. must have conceived ἀρχή in the sense of internal principle, ἐνυπάρχον τι or στοιχεῖον. It is most improbable, however, that A. intended ἀρχή to bear this sense, it must mean what it means below a 18, what in 404 b 2 is expressed by τὸ αἴτιον τοῦ καλῶς καὶ ὀρθῶς, and ἀρχή standing alone, as in a 18, would be sufficient to indicate this. In any case μάλιστα should not be separated from πάντων, as if the former word went with τίθεται in the sense of *potissimum* and the latter with ἀρχή. As to ἁπάντων, the variant of codd. Sy, the testimony of Them. is of little weight, as he is very fond of changing πᾶς of the text into ἅπας, as anyone may easily verify for himself.

a 16 μόνον γοῦν...17 καθαρόν, "at all events he asserts that mind and mind alone of all things that are is simple, unmixed and pure." Cf. Anax. *frag.* 12 D. This long fragment begins thus: *τὰ μὲν ἄλλα παντὸς μοῖραν μετέχει, νοῦς δέ ἐστιν ἄπειρον καὶ αὐτοκρατὲς καὶ μέμεικται οὐδενὶ χρήματι, ἀλλὰ μόνος αὐτὸς ἐφ' ἑαυτοῦ ἐστιν. εἰ μὴ γὰρ ἐφ' ἑαυτοῦ ἦν, ἀλλά τεῳ ἐμέμεικτο ἄλλῳ, μετεῖχεν ἂν ἁπάντων χρημάτων, εἰ ἐμέμεικτό τεῳ· ἐν παντὶ γὰρ παντὸς μοῖρα ἔνεστιν, ὥσπερ ἐν τοῖς πρόσθεν [fr. 11] μοι λέλεκται. καὶ ἂν ἐκώλυεν αὐτὸν τὰ συμμεμειγμένα, ὥστε μηδενὸς χρήματος κρατεῖν ὁμοίως ὡς καὶ μόνον ἐόντα ἐφ' ἑαυτοῦ. ἔστι γὰρ λεπτότατόν τε πάντων χρημάτων καὶ καθαρώτατον καὶ γνώμην γε περὶ παντὸς πᾶσαν ἴσχει καὶ ἰσχύει μέγιστον. καὶ ὅσα γε ψυχὴν ἔχει καὶ μείζω καὶ ἐλάσσω, πάντων νοῦς κρατεῖ. καὶ τῆς περιχωρήσιος τῆς συμπάσης νοῦς ἐκράτησεν, ὥστε περιχωρῆσαι τὴν ἀρχήν. καὶ πρῶτον ἀπό τοῦ σμικροῦ ἤρξατο περιχωρεῖν, ἐπὶ δὲ πλέον περιχωρεῖ, καὶ περιχωρήσει ἐπὶ πλέον. καὶ τὰ συμμισγόμενά τε καὶ ἀποκρινόμενα καὶ διακρινόμενα πάντα ἔγνω νοῦς. καὶ ὁποῖα ἔμελλεν ἔσεσθαι καὶ ὁποῖα ἦν, ἅσσα νῦν μὴ ἔστι καὶ ὁποῖα ἔστι, πάντα διεκόσμησε νοῦς, καὶ τὴν περιχώρησιν ταύτην, ἣν νῦν περιχωρέει τά τε ἄστρα καὶ ὁ ἥλιος καὶ ἡ σελήνη καὶ ὁ ἀὴρ καὶ ὁ αἰθὴρ οἱ ἀποκρινόμενοι. ἡ δὲ περιχώρησις αὐτὴ ἐποίησεν ἀποκρίνεσθαι. καὶ ἀποκρίνεται ἀπό τε τοῦ ἀραιοῦ τὸ πυκνὸν καὶ ἀπὸ τοῦ ψυχροῦ τὸ θερμὸν καὶ ἀπὸ τοῦ ζοφεροῦ τὸ λαμπρὸν καὶ ἀπὸ τοῦ διεροῦ τὸ ξηρόν. μοῖραι δὲ πολλαὶ πολλῶν εἰσι. παντάπασι δὲ οὐδὲν ἀποκρίνεται οὐδὲ διακρίνεται ἕτερον ἀπὸ τοῦ ἑτέρου πλὴν νοῦ. νοῦς δε πᾶς ὅμοιός ἐστι καὶ ὁ μείζων καὶ ὁ ἐλάττων. ἕτερον δὲ οὐδέν ἐστιν ὅμοιον οὐδενί, ἀλλ' ὅτων πλεῖστα ἔνι, ταῦτα ἐνδηλότατα ἓν ἕκαστόν ἐστι καὶ ἦν.*

To νοῦς as thus described A. returns *infr.* b 19, 429 a 18—20, b 22 sqq. and its great influence on A.'s own doctrine must be my apology for citing the fragment in full.

a 18. τό τε γινώσκειν. Cf. Anax. *frag.* 12 D καὶ τὰ συμμισγόμενά τε καὶ ἀποκρινόμενα καὶ διακρινόμενα πάντα ἔγνω νοῦς, and *supr.* καὶ γνώμην γε περὶ παντὸς πᾶσαν ἴσχει, cited in last note. Cf. 429 a 18—20. **καὶ τὸ κινεῖν.** Anax. *frag.* 12 D καὶ τῆς περιχωρήσιος τῆς συμπάσης νοῦς ἐκράτησεν, ὥστε περιχωρῆσαι τὴν ἀρχήν, and *frag.* 13 D καὶ ἐπεὶ ἤρξατο ὁ νοῦς κινεῖν, ἀπὸ τοῦ κινουμένου παντὸς ἀπεκρίνετο, καὶ ὅσον ἐκίνησεν ὁ νοῦς, πᾶν τοῦτο διεκρίθη· κινουμένων δὲ καὶ διακρινομένων ἡ περιχώρησις πολλῷ μᾶλλον ἐποίει διακρίνεσθαι.

a 19. Θαλῆς. Cf. 411 a 8, *Metaph.* 983 b 20 sqq., 984 a 2.

a 20. τὸν λίθον, sc. τὸν μάγνητα, the Magnesian stone, the magnet or lodestone, so called from the town (probably the Lydian, though according to Pliny the Thessalian, Magnesia). Cf. Plat. *Ion* 533 D ὥσπερ ἐν τῇ λίθῳ, ἣν Εὐριπίδης

μὲν Μαγνῆτιν ὠνόμασεν, οἱ δὲ πολλοὶ Ἡρακλείαν. καὶ γὰρ αὕτη ἡ λίθος οὐ μόνον αὐτοὺς τοὺς δακτυλίους ἄγει τοὺς σιδηροῦς, ἀλλὰ καὶ δύναμιν ἐντίθησι τοῖς δακτυλίοις, ὥστ' αὖ δύνασθαι ταὐτὸν τοῦτο ποιεῖν, ὅπερ ἡ λίθος, ἄλλους ἄγειν δακτυλίους, ὥστ' ἐνίοτε ὁρμαθὸς μακρὸς πάνυ σιδηρίων καὶ δακτυλίων ἐξ ἀλλήλων ἤρτηται. Cf. Lucr. VI. 908 sq.

> quem Magneta vocant patrio de nomine Grai,
> Magnetum quia fit patriis in finibus ortus,

where see Munro's note. Diog. Laert. I. 24 Ἀριστοτέλης δὲ καὶ Ἱππίας φασὶν αὐτὸν [Thales] καὶ τοῖς ἀψύχοις μεταδιδόναι ψυχῆς, τεκμαιρόμενον ἐκ τῆς λίθου τῆς μαγνήτιδος καὶ τοῦ ἠλέκτρου.

a 21. Διογένης, i.e. Diogenes of Apollonia (Diog. Laert. IX. 57): a town in Crete according to Steph. Byz. 106, 13, although Aelian *V. H.* II. 31 referred him to the Phrygian Apollonia. He is ridiculed in the *Clouds* of Aristophanes, 227 sqq. (cf. Diels in *Rhein. Mus.* XLII. 12 sqq.), wrote a Περὶ φύσεως, from which Simpl. quotes (*In Physica* 151, 28 sqq., 153, 17, 20), and is criticised by Theophr. *De Sensibus*, 39—45 (*Doxogr. Gr.* p. 510 sqq.). See further concerning him Siebeck, *Gesch. der Psych.* I. 82 sqq., 115 sqq., 132 sqq., 150, Burnet, *Early Greek Philosophers*, p. 359 sqq., Gomperz, *Greek Thinkers*, Bk III. ch. 3, p. 370 sqq., Eng. Tr. The latter regards him as an eclectic influenced by Leucippus and Anaxagoras (Simpl. *In Phys.* 25. 3) in spite of his antagonistic attitude to the main principles of their systems. Cf. Simpl. *In Phys.* 152, 18 [*frag.* 4 D] ἄνθρωποι γὰρ καὶ τὰ ἄλλα ζῷα ἀναπνέοντα ζώει τῷ ἀέρι. καὶ τοῦτο αὐτοῖς καὶ ψυχή ἐστι καὶ νόησις, and Simpl. *Phys.* I. 152, 22 [*frag.* 5 D] καί μοι δοκεῖ τὸ τὴν νόησιν ἔχον εἶναι ὁ ἀὴρ καλούμενος ὑπὸ τῶν ἀνθρώπων, καὶ ὑπὸ τούτου πάντας καὶ κυβερνᾶσθαι καὶ πάντων κρατεῖν· αὐτὸ γάρ μοι τοῦτο θεὸς δοκεῖ εἶναι καὶ ἐπὶ πᾶν ἀφῖχθαι καὶ πάντα διατιθέναι καὶ ἐν παντὶ ἐνεῖναι. καὶ ἔστιν οὐδὲ ἓν ὅ τι μὴ μετέχει τούτου. μετέχει δὲ οὐδὲ ἓν ὁμοίως τὸ ἕτερον τῷ ἑτέρῳ, ἀλλὰ πολλοὶ τρόποι καὶ αὐτοῦ τοῦ ἀέρος καὶ τῆς νοήσιός εἰσιν. ἔστι γὰρ πολύτροπος καὶ θερμότερος καὶ ψυχρότερος καὶ ξηρότερος καὶ ὑγρότερος καὶ στασιμώτερος καὶ ὀξυτέρην κίνησιν ἔχων, καὶ ἄλλαι πολλαὶ ἑτεροιώσιες ἔνεισι καὶ ἡδονῆς καὶ χροιῆς ἄπειροι κ.τ.λ. See also Beare, *Greek Theories of Elementary Cognition.*

a 21. ἕτεροί τινες. Cf. Aetii *Plac.* IV. 3. 2 [*Doxogr. Gr.* 387 b 10] Ἀναξιμένης Ἀναξαγόρας Ἀρχέλαος Διογένης ἀερώδη [int. τὴν ψυχὴν ἀπεφήναντο], Theodoret *Graec. aff. Cur.* V. 18 Ἀναξιμένης δὲ καὶ Ἀναξίμανδρος καὶ Ἀναξαγόρας καὶ Ἀρχέλαος ἀερώδη τῆς ψυχῆς τὴν φύσιν εἰρήκασιν. Aetii *Plac.* I. 3, 4 [Anaximenes *frag.* 2 D *Doxogr. Gr.* 278 a 12, b 8] οἷον ἡ ψυχή, φησίν, ἡ ἡμετέρα ἀὴρ οὖσα συγκρατεῖ ἡμᾶς. In Pl. *Phaedo* 96 B the views πότερον τὸ αἷμά ἐστιν ᾧ φρονοῦμεν, ἢ ὁ ἀήρ, ἢ τὸ πῦρ, are mentioned side by side as familiar to Socrates when engaged in the study of nature. A. is reticent about Anaximenes, who, however, is credited with this view by later authorities, cf. Tertull. *De Anima* c. 9 (secundum quosdam), Macrob. *Somn. Scipion.* I. 14, 20.

a 23. γινώσκειν τε καὶ κινεῖν τὴν ψυχήν. That to Diogenes knowledge included all forms of sense-perception is clear from the last words of *frag.* 5 ὅμως δὲ πάντα τῷ αὐτῷ καὶ ζῇ καὶ ὁρᾷ καὶ ἀκούει καὶ τὴν ἄλλην νόησιν ἔχει ἀπὸ τοῦ αὐτοῦ πάντα. The evidence for κινεῖν is not so obvious from the scanty fragments extant, but at the beginning of *frag.* 5 the functions of governing and controlling ὑπὸ τούτου πάντας κυβερνᾶσθαι καὶ πάντων κρατεῖν appear to be transferred to air from the νοῦς of Anaxagoras. This would suffice for Aristotle, who has argued above (404 a 25 sqq.) that the Anaxagorean νοῦς is κινητικός (cf. 404 b 8). The following sentence (a 23—5) ᾗ μὲν πρῶτον...κινητικὸν εἶναι reads like an inference drawn by A. himself in his constant endeavour to interpret more precisely the vague theories of his predecessors. Cf. 404 b 1 ἧττον διασαφεῖ and the notorious

reconstructions of the Empedoclean and Anaxagorean teaching, *Metaph.* 993 a 15—24, 989 a 30—b 21.

a 26. εἴπερ: cf. the similar clause about Thales a 20. In both cases the sentence with εἴπερ gives the ground of an inference drawn by A. **τὴν ἀναθυμίασιν.** Probably a term first used by Heraclitus: at any rate the verb occurs in *frag.* 42 Byw., 12 D=Arius Did. (ap. Euseb. in Diels, *Doxographi*, 471, 1 sqq.) *Ζήνων τὴν ψυχὴν λέγει αἰσθητικὴν ἀναθυμίασιν, καθάπερ Ἡράκλειτος· βουλόμενος γὰρ ἐμφανίσαι, ὅτι αἱ ψυχαὶ ἀναθυμιώμεναι νοεραὶ ἀεὶ γίνονται, εἴκασεν αὐτὰς τοῖς ποταμοῖς λέγων οὕτως· ποταμοῖσι τοῖσιν αὐτοῖσιν ἐμβαίνουσιν ἕτερα καὶ ἕτερα ὕδατα ἐπιρρεῖ· καὶ ψυχαὶ δὲ ἀπὸ τῶν ὑγρῶν ἀναθυμιῶνται. ἀναθυμίασιν μὲν οὖν ὁμοίως τῷ Ἡρακλείτῳ τὴν ψυχὴν ἀποφαίνει Ζήνων.* Hence Bywater concludes: est igitur hoc dictum Zenoni tribuendum, scilicet Heraclitea verba libere citanti inque suum usum accommodanti. Thus, according to Heraclitus, the soul is vapour or heat rising from moisture (Auch die Seelen dünsten aus dem Feuchten hervor, D). As to the grammatical construction, supply from the preceding clause *εἶναί φησι ψυχήν*. If, according to Heraclitus, all other things are derived from vapour, vapour is his ἀρχή: if this vapour be identified with soul, then his ἀρχὴ is soul: which is the same thing as saying that the soul is his ἀρχή. **συνίστησιν,** "constructs," i.e. represents as constructed. Cf. *supr.* 404 b 17 ποιεῖ. Heraclitus also called his ἀρχὴ "fire," which he does not seem to have clearly distinguished from dry air or heat (Latin *vapor*). Compare the well-known dictum *αὔη ψυχὴ σοφωτάτη*, *frag.* 74 Byw., 118 D.

a 27. ἀσωματώτατον, as above 405 a 7, relatively incorporeal or least corporeal. **τὸ δὲ κινούμενον κινουμένῳ γινώσκεσθαι.** A special application of the maxim 404 b 17 *γινώσκεσθαι τῷ ὁμοίῳ τὸ ὅμοιον*: if the object known be in motion, then the soul by which it is known must also be in motion, *ῥέον ἀεί*.

a 28. ἐν κινήσει δ' εἶναι τὰ ὄντα. For this doctrine cf. Plato, *Crat.* 402 A *λέγει που Ἡράκλειτος, ὅτι πάντα χωρεῖ καὶ οὐδὲν μένει, καὶ ποταμοῦ ῥοῇ ἀπεικάζων τὰ ὄντα λέγει, ὡς δὶς ἐς τὸν αὐτὸν ποταμὸν οὐκ ἂν ἐμβαίης.* Also *Theaet.* 180 D, where the doctrine *ὅτι πάντα κινεῖται* is ascribed to the later Heracliteans, facetiously styled "philosophers in flux" (*τοὺς ῥέοντας*), *ib.* 181 A.

a 29. τούτοις, i.e. Thales, Diogenes of Apollonia, Heraclitus.

a 29. Ἀλκμαίων of Croton: physician of the 5th century, of whom we learn some interesting particulars, e.g. that he regarded the brain as the seat of sensation, Theophr. *de Sensibus* § 26 (*Doxogr. Gr.* 507), Plut. *Plac.* IV. 17 (Diels, *Doxogr. Gr.* 407, 2). But he distinguished between sense-perception and intelligence, the latter being, according to him, peculiar to man. *ἄνθρωπον γὰρ* [*φησὶ*] *τῶν ἄλλων διαφέρειν ὅτι μόνον ξυνίησι, τὰ δ' ἄλλα αἰσθάνεται μέν, οὐ ξυνίησι δέ* (*Doxogr. Gr.* 506, 26). See Beare, *op. cit.* p. 251. It is probably Alcmaeon's view which is cited in some detail in *Phaedo* 96 B *ἢ τούτων μὲν οὐδέν, ὁ δ' ἐγκέφαλός ἐστιν ὁ τὰς αἰσθήσεις παρέχων τοῦ ἀκούειν καὶ ὁρᾶν καὶ ὀσφραίνεσθαι, ἐκ τούτων δὲ γίγνοιτο μνήμη καὶ δόξα, ἐκ δὲ μνήμης καὶ δόξης, λαβούσης τὸ ἠρεμεῖν, κατὰ ταῦτα γίγνεσθαι ἐπιστήμην.* The speech of Eryximachus in Pl. *Symp.* 186 B sqq. seems to owe not a little to Alcmaeon.

a 30. ἀθάνατον εἶναι. This tenet is attributed to Alcmaeon by Boethus, apud Euseb. *Praep. Ev.* XI. 28. 5, Diog. Laert. VIII. 83, Stobaeus *Ecl.* I. 49 [*Doxogr. Gr.* 386 b 4 sqq.]: cf. Theodoret *Graec. aff. Cur.* V. 17 [*Doxogr. Gr.* 386 t[b] 6]. On the other hand Alcmaeon held, according to Arist. *Probl.* XVII. 3, 916 a 33, that men are nevertheless perishable beings (*ἀπόλλυσθαι*) because they cannot join their beginning to their end (*ὅτι οὐ δύνανται τὴν ἀρχὴν τῷ τέλει προσάψαι*). This means, according to Gomperz, that "if old age

were not merely figuratively but literally a second childhood, men (and animals) would be able to live for ever, since a cycle would be created which could be constantly renewed. But the series of changes suffered at the various periods of human (and animal) life follow a progressive and not a cyclical line" (*Greek Thinkers*, Eng. Tr. I. p. 151).

405 b 1. **τὸν οὐρανὸν ὅλον.** This term originally meant the firmament, but was naturally employed by philosophers for the world or universe (like *κόσμος*). In certain passages it is matter of doubt in which of these ways it should be interpreted, e.g. *Metaph.* 986 b 24 *εἰς τὸν ὅλον οὐρανὸν ἀποβλέψας τὸ ἓν εἶναί φησι τὸν θεόν* (sc. Ξενοφάνης). Cf. the Epicurean criticism in Cic. *De Nat. Deor.* I. 11. 27 Crotoniates autem Alcmaeon, qui soli et lunae reliquisque sideribus animoque praeterea divinitatem dedit, non sensit sese mortalibus rebus immortalitatem dare; Clem. Alex. *Protrept.* 66. 58 P. *ὁ γάρ τοι Κροτωνιάτης Ἀλκμαίων θεοὺς ᾤετο τοὺς ἀστέρας εἶναι ἐμψύχους ὄντας.*

b 1. **τῶν δὲ φορτικωτέρων καὶ ὕδωρ τινὲς ἀπεφήναντο,** int. *τὴν ψυχήν*. The term *φορτικός* is found in *Eth. Nic.* as the opposite of *πεπαιδευμένος* and *χαρίεις*, and means approximately "vulgar." As applied intellectually, it serves to censure crude thinking or incapacity to seize distinctions. Thus in *Phys.* I. 2, 185 a 10, 3, 186 a 8 the theory or reasoning (*λόγος*) of Melissus is called *φορτικός*, while in *Metaph.* 986 b 27 Melissus himself and Xenophanes are termed *ἀγροικότεροι* as opposed to Parmenides who is *μᾶλλον βλέπων*. In *Metaph.* 1001 b 14 the subtler Eleatic Zeno is said *φορτικῶς θεωρεῖν*. Again, in *De Part. Anim.* II. 7, 652 b 8 those who identify the soul with fire are censured as making a crude assumption (*φορτικῶς τιθέντες*), as is Hippon here.

b 2. **καθάπερ Ἵππων.** The fuller form of the name Ἱππῶναξ is preserved Aet. *Plac.* V. 7. 3 (*Doxogr. Gr.* 419 a 24): cf. Anonymi Londin. *Ex Arist. Iatr. Menon. eclogae,* 11, 22 sqq. *Ἱππ<ων>* [or Ἱππ(ῶναξ)] *δὲ ὁ Κροτωνιάτης οἴεται ἐν ἡμῖν οἰκείαν εἶναι ὑγρότητα, καθ' ἣν καὶ αἰσθανόμεθα καὶ ἧ ζῶμεν· ὅταν μὲν οὖν οἰκείως ἔχῃ ἡ τοιαύτη ὑγρότης, ὑγιαίνει τὸ ζῷον, ὅταν δὲ ἀναξηρανθῇ, ἀναισθητεῖ δὲ τὸ ζῷον καὶ ἀποθνήσκει. διὰ δὴ τοῦτο οἱ γέροντες ξηροὶ καὶ ἀναίσθητοι, ὅτι χωρὶς ὑγρότητος· ἀναλόγως δὲ τὰ πέλματα ἀναίσθητα, ὅτι ἄμοιρα ὑγρότητος. καὶ ταῦτα μὲν ἄχρι τούτου φησίν. ἐν ἄλλῳ δὲ βιβλίῳ αὐτὸς ἀνὴρ λέγει τὴν κατωνομασμένην ὑγρότητα μεταβάλλειν δι' ὑπερβολὴν θερμότητος καὶ δι' ὑπερβολὴν ψυχρότητος καὶ οὕτως νόσους ἐπιφέρειν, μεταβάλλειν δέ φησιν αὐτὴν ἢ ἐπὶ τὸ πλεῖον ὑγρὸν ἢ ἐπὶ τὸ ξηρότερον ἢ ἐπὶ τὸ παχυμερέστερον ἢ ἐπὶ τὸ λεπτομερέστερον ἢ εἰς ἕτερα, καὶ τὸ αἴτιον οὕτως νοσολογεῖ, τὰς δὲ νόσους τὰς γινομένας οὐχ ὑπαγορεύει.* This important fragment shows that Hippon, like Diogenes of Apollonia, Alcmaeon and Philolaus, was a physician as well as a philosopher, and, like Diogenes of Apollonia, an eclectic adapting one of the older Ionian theories (this time that of Thales) to the newer speculations introduced by Parmenides. From Schol. Ven. ad Aristoph. *Nub.* 96 sqq. we learn that Hippon had been ridiculed in the Πανόπται of Cratinus before Aristophanes brought out the *Clouds*, so that he must have lived in the age of Pericles, and that Cratinus attacked him for his impiety (Schol. Clem. *Protrept.* I. 422, 23 sq. Dind., IV. 103 Klotz), and the epithet *ἄθεος* seems to have stuck to him (Philop. *ad hunc loc.* 88, 23, Simpl. *in Phys.* 23, 22, Clem. Alex. *Protrept.* 24, p. 20 P., Ioann. Diac., *Alleg. in Hes. Theog.* 116). In *Metaph.* 984 a 3 A. passes him over scornfully with a sneer at the tenuity of his intellect. A better summary is furnished by Hippolytus, *Refut. haeres.* I. 16 [*Doxogr. Gr.* 566] Ἵ. *δὲ ὁ Ῥηγῖνος ἀρχὰς ἔφη ψυχρὸν τὸ ὕδωρ καὶ θερμὸν τὸ πῦρ. γενόμενον δὲ τὸ πῦρ ὑπὸ ὕδατος κατανικῆσαι τὴν τοῦ γεννήσαντος δύναμιν συστῆσαί τε τὸν κόσμον, τὴν δὲ ψυχὴν ἐγκέφαλον λέγει, ποτὲ δὲ ὕδωρ· καὶ γὰρ τὸ σπέρμα εἶναι, <κατὰ> τὸ φαινόμενον ἡμῖν, ἐξ ὑγροῦ, ἐξ οὗ φησὶ ψυχὴν γίνεσθαι.* Croton is

more likely to have been his birthplace than either Rhegium or Metapontum (Censorinus). According to Aristoxenus apud Censorinum, *De die natali*, c. 5, and Iamblichus *V. Pyth.* 267, it was Samos.

b 3. **πεισθῆναι δ' ἐοίκασιν ἐκ τῆς γονῆς.** A. makes much the same remark about Thales, *Metaph.* 983 b 26.

b 4. **τοὺς αἷμα φάσκοντας τὴν ψυχήν.** Doubtless with special reference to Empedocles, *frag.* 105 D, 317 K *αἷμα γὰρ ἀνθρώποις περικάρδιόν ἐστι νόημα.* Hippon's polemic against Empedocles recalls Diogenes of Apollonia's correction of Anaxagoras, *frag.* 5 D.

b 5. **ταύτην,** sc. *τὴν γονήν.*

b 6. **Κριτίας,** the famous Athenian oligarch, leader of the Thirty. There seems no reason to question his identity, in spite of the opposite opinion cited as Alexander's by Philop. 89, 8 *Κριτίαν εἴτε τὸν ἕνα τῶν τριάκοντα, ὃς καὶ Σωκράτους ἠκροάσατο, ἢ καὶ ἄλλον τινὰ λέγει, οὐδὲν διαφερόμεθα. φασὶ δὲ καὶ ἄλλον Κριτίαν γεγονέναι σοφιστήν, οὗ καὶ τὰ φερόμενα συγγράμματα εἶναι, ὡς Ἀλέξανδρος λέγει· τὸν γὰρ τῶν τριάκοντα μηδὲ γεγραφέναι ἄλλο τι πλὴν Πολιτείας ἐμμέτρους.* Philoponus in the introduction to his commentary had previously referred to Critias as follows: 9, 3 *καθόλου δὲ τὴν ψυχὴν οἱ μέν φασιν ἀσώματον εἶναι, οἱ δὲ σῶμα· καὶ τῶν σῶμα οἱ μὲν ἁπλοῦν, οἱ δὲ σύνθετον· καὶ τῶν σύνθετον οἱ μὲν ἐκ συνημμένων σωμάτων, οἱ δὲ ἀσυνάπτων....* 9, 19 *οἱ δὲ ἐκ συνημμένων, ὡς Κριτίας, ὁ εἷς τῶν τριάκοντα· αἷμα γὰρ ἔλεγεν εἶναι τὴν ψυχήν, "αἷμα γάρ," φησιν, "ἀνθρώποις περικάρδιόν ἐστι νόημα."* The blunder in the citation of this verse of Empedocles as if Critias were the author is attributed to Philoponus himself by Diels, *Doxogr. Gr.* 214.

b 7. **τοῦτο δ',** int. *τὸ αἰσθάνεσθαι.* **ὑπάρχειν,** int. *τῇ ψυχῇ.* **διὰ τὴν τοῦ αἵματος φύσιν.** See on 405 a 14 *ὡς μιᾷ φύσει.* Here *φύσις* is virtually *οὐσία.* The parts without blood, e.g. bones and hair, are destitute of sensation, as Aristotle points out 410 a 30 sqq.

b 8. **πάντα γὰρ...πλὴν τῆς γῆς** "have secured the vote of at least one adjudicator." The metaphor, of which A. is fond (cf. *Metaph.* 989 a 6 sqq., *Pol.* 1337 a 42), comes from the method of awarding the prize in dramatic contests. Similarly in *Metaph.* loc. cit. A. remarks that fire, water and air have each been selected by one philosopher or another as the material principle of things: *τῶν δὲ τριῶν ἕκαστον στοιχείων εἴληφε κριτήν τινα· οἱ μὲν γὰρ* [sc. *τῶν ἐν λεγόντων*] *πῦρ, οἱ δ' ὕδωρ, οἱ δ' ἀέρα τοῦτ' εἶναί φασιν. καίτοι διὰ τί ποτ' οὐ καὶ τὴν γῆν λέγουσιν, ὥσπερ οἱ πολλοὶ τῶν ἀνθρώπων;*

b 9. **ταύτην,** int. *τὴν γῆν.* **πλὴν εἴ τις αὐτὴν...10 ἢ πάντα.** *αὐτήν* i.e. *τὴν ψυχήν.* Empedocles includes earth amongst the four elements of soul (404 b 13). For the difference between *ἐκ πάντων εἶναι τῶν στοιχείων* and *πάντα* (*εἶναι τὰ στοιχεῖα*) cf. 404 b 12 *εἶναι δὲ καὶ ἕκαστον ψυχὴν τούτων* and Torstrik's remark cited in note on 405 a 10. The same distinction seems intended by Philoponus in the classification of theories given 9, 3 sqq. (cited in note on 405 b 6), where he divides those who made the soul *σύνθετον* into *οἱ μὲν ἐκ συνημμένων σωμάτων,* e.g. Critias, and *οἱ δὲ* <*ἐξ*> *ἀσυνάπτων,* e.g. Leucippus and Democritus. Cf. Philop. 9, 16 sqq.

405 b 11—30. Recapitulating, we may reduce all previous views to three heads, according as motion, perception or incorporeality is taken for the characteristic of soul. Further, the agreement pointed out between the account of the soul given by the several philosophers and their theory of the universe is confirmed with modifications in detail. When the soul is defined by perception and knowledge, this agreement rests on the assumption that like is known by like (§§ 20, 21, 23). But here Anaxagoras is an exception, for his principle, intel-

ligence, is affirmed to be impossible, and to have nothing in common with the other elements of the universe (§ 22).

b 11 ὁρίζονται δὲ...τρισὶν ὡς εἰπεῖν...12 τῷ ἀσωμάτῳ. In spite of its position I take *ὡς εἰπεῖν* with *πάντες*. A. goes to great lengths with hyperbaton, and *πάντες* is again separated from *ὡς εἰπεῖν* by three words, 408 a 1. It would indeed be possible to take *ὡς εἰπεῖν* with *τρισίν*. So Philop. 90, 20 sqq. Cf. *σχεδὸν δύο*, 403 b 28. But A.'s fondness for constructions of the type *πάντες, οἱ μὲν...οἱ δὲ*...makes the former view more probable. In any case it comes to this, that, since no definition falls outside of the three characteristics (cf. *Metaph.* 988 a 20—23, 993 a 11—15), all are based upon one or more of them. To *ὁρίζονται* corresponds the use of *ὅρος* in 404 a 9. This triple division is repeated 409 b 19 sqq., and seems there to be finally adopted as more precise than the twofold division at the opening of the chapter 403 b 25 sqq. The present statement must be carefully compared with both the passages referred to, to avoid misconception of the meaning. In 409 b 20 we have, not *κινήσει* but *οἱ μὲν τὸ κινητικώτατον* (sc. *τὴν ψυχὴν*) *ἀπεφήναντο τῷ κινεῖν ἑαυτό*, which combines both *τὸ κινοῦν* and *τῶν κινουμένων τι* of 403 b 29 sqq. Instead of *αἰσθήσει* we have in 409 b 23 (*λέγεται*) *τὸ ἐκ τῶν στοιχείων αὐτὴν εἶναι* which agrees exactly with the inference given 404 b 8 sq. *ὅσοι δ' ἐπὶ τὸ γινώσκειν καὶ τὸ αἰσθάνεσθαι τῶν ὄντων, οὗτοι δὲ λέγουσι τὴν ψυχὴν τὰς ἀρχάς* [whether these *ἀρχαὶ* be many or only a single one]...*ὥσπερ Ἐμπεδοκλῆς μὲν ἐκ τῶν στοιχείων πάντων*. Finally, *τῷ ἀσωμάτῳ*, which at first sight would apply only to the theories of Plato and Xenocrates, who made the soul immaterial like their immaterial *ἀρχαί* (cf. 404 b 29—405 a 4), is proved to bear the elastic and relative meaning pointed out in the notes on 405 a 6 and 405 a 27, for in 409 b 20 sqq. the corresponding theory is thus stated, *οἱ δὲ σῶμα τὸ λεπτομερέστατον ἢ τὸ ἀσωματώτατον τῶν ἄλλων* (int. *τὴν ψυχὴν ἀπεφήναντο*). The classification is accommodated to the general theories of *τὰ ὄντα* and their *ἀρχαὶ* held by A.'s predecessors and reviewed in *Metaph.*, but even so the choice of the term *ἀσώματον* is unfortunate when we find A. there complaining that some of these theories have taken no account of *ἀσώματα* proper (e.g. *Metaph.* 988 b 24, *τῶν γὰρ σωμάτων τὰ στοιχεῖα τιθέασι μόνον, τῶν δ' ἀσωμάτων οὔ, ὄντων καὶ ἀσωμάτων*: cf. also 989 b 29—990 a 8).

It may be asked, why *πάντες...ὡς εἰπεῖν*? Either this is one of the cautious expressions with which A. habitually guards himself when making a sweeping statement (cf. 403 b 28 *σχεδὸν δύο*): or else he may have in view the theory of *ἁρμονία*, since in one of the two forms to which he reduces it in I., c. 4 that theory cannot easily be made to square with any of his three divisions. Philop. 90, 20 comments thus: *ταῦτα ὥσπερ ἀνακεφαλαίωσίς ἐστι τῶν εἰρημένων. ὁρίζονται δὲ οἷον περιγράφουσι καὶ χαρακτηρίζουσι. πρότερον δ' εἰπὼν κινήσει καὶ αἰσθήσει γνωρίζεσθαι τὴν ψυχήν, νῦν προσέθηκε καὶ τῷ ἀσωμάτῳ, ὡς ἐκ τῶν ἀπηριθμημένων δοξῶν καὶ τοῦτο ἀνακύψαν καὶ εὑρεθέν. τῷ γὰρ εὐκινήτῳ καὶ ἀεικινήτῳ συνέπεται τὸ ἀσώματον. ἀσώματον δὲ οὐ τὸ κυρίως λέγει νῦν, ἀλλὰ τὸ λεπτομερέστατον.* The last remark accords better with 409 b 21 than does the paraphrase of Themistius (14, 4 H., 25, 6 Sp.), ingenious as the latter undoubtedly is: *ἐκ δὴ τῆς ἱστορίας δῆλόν ἐστιν, ὅτι δύο μὲν προτίθενται περὶ τὴν ψυχὴν θεωρεῖν κίνησιν καὶ γνῶσιν, ὑποφέρονται δὲ ὥσπερ καὶ ἄκοντες ἐπὶ τρίτον ἕτερον τὸ ἀσώματον· οἱ γὰρ λεπτομερέστατον αὐτὴν τιθέμενοι καὶ διὰ τοῦτο εὐκίνητον ὀνειροπολεῖν ἐοίκασι ταύτην τὴν φύσιν, λέγω δὲ τὴν ἀσώματον.* This was evidently suggested by *Metaph.* 984 a 18 sq., 984 b 8—11, 993 a 11—24.

b 12. τούτων δ' ἕκαστον ἀνάγεται πρὸς τὰς ἀρχάς, i.e. we trace the connexion with the first principle or principles assumed by the thinker in question. This

connexion is most obvious in the theories which start from αἴσθησις and declare soul to be τὸ γνωριστικόν: 404 b 8 sqq., 404 b 30—405 a 7. But A. now proceeds to show in detail that it can also be traced in the other theories, so far at least as concerns the number and nature of the ἀρχαί assumed (404 b 30 τίνες καὶ πόσαι).

b 13. **ἢ στοιχεῖον ἢ ἐκ τῶν στοιχείων ποιοῦσι**, sc. τὴν ψυχήν. The inference is presented in this twofold form in order to include Diogenes of Apollonia, Heraclitus, and Hippon, who, as we have seen, assuming a single στοιχεῖον for nature, explained cognition by making the soul consist of this στοιχεῖον. Anaxagoras (see next note and that on 405 b 19) is reckoned with this group because, as was explained 405 a 17, he assigns to his principle Νοῦς both functions, τό τε γινώσκειν καὶ τὸ κινεῖν. Empedocles and Critias, on the other hand, and, in a very different region, Plato assume a plurality of elements for the universe and derive the soul, which is a compound, from these same elements.

b 14. **λέγοντες, πλὴν ἑνός**. The exception is Anaxagoras. He must however have been influenced by Heraclitus, who is joined with him by Theophrastus *De Sensibus* § 1 (*Doxogr. Gr.* 499, 1 sqq.) περὶ δ' αἰσθήσεως αἱ μὲν πολλαὶ καὶ καθόλου δόξαι δύ' εἰσίν· οἱ μὲν γὰρ τῷ ὁμοίῳ ποιοῦσιν, οἱ δὲ τῷ ἐναντίῳ. Παρμενίδης μὲν καὶ Ἐμπεδοκλῆς καὶ Πλάτων τῷ ὁμοίῳ, οἱ δὲ περὶ Ἀναξαγόραν καὶ Ἡράκλειτον τῷ ἐναντίῳ. But αἴσθησις (and νόησις) regarded as ἀλλοίωσις is to these early φυσιολόγοι (cf. 427 a 26, 416 b 33 sq.) merely a particular case of activity and passivity in general, the corporeal αἰσθητόν acting upon the equally corporeal αἰσθανόμενον or αἰσθητικόν which in turn πάσχει ὑπὸ τοῦ ποιητικοῦ. Accordingly in his fuller discussion of αἴσθησις (417 a 1) A. refers us to *De Gen. et Corr.* I. 7, 323 b 1 sqq. (see the citation in note on 410 a 23) where we find a similar conflict of opinion on the general question. A. concludes that two bodies capable of mutual interaction must be ἐναντία in his sense of the term, i.e. members of the same genus, but belonging to different species of it, so that something may be said for each of the two conflicting views. Cf. *De A.* 416 b 6—9. In the special application to perception and cognition Anaxagoras consistently adhered to the first of the two views set forth in *De Gen. et Corr.* I. 7, Theophr. *De Sensibus* § 27 Ἀναξαγόρας δὲ γίνεσθαι [int. τὴν αἴσθησιν] τοῖς ἐναντίοις· τὸ γὰρ ὅμοιον ἀπαθὲς ὑπὸ τοῦ ὁμοίου. The inconsistency of those who, like Empedocles, supported this view as a physical doctrine, but deserted it when they treated of sensation and cognition, is urged 410 a 23 sqq. If Anaxagoras was the only exception, it would seem that A. did not share the doubt of Theophrastus about Democritus, *De Sens.* § 49: cf. the admission of Theophr. § 50 τὰ γὰρ ὁμόφυλα ἕκαστον γνωρίζειν. In fact, since to the Atomists all sensory processes were physical processes and all the senses modes of touching or physical contact (*De Sensu* 4, 442 a 29), and since, further, all matter was homogeneous, there is no room to doubt that Democritus carried out the principle "like is known by like" more consistently than any other of the earlier physicists.

b 15. **φασὶ γὰρ...τῷ ὁμοίῳ**. The explicit statement can hardly be substantiated beyond Empedocles as cited above 404 b 13—15. A. and Theophrastus are however right in declaring that some such assumption was made by most of the natural philosophers who attempted an explanation of cognition starting usually with sense-perception. Theophrastus confesses that it was originally not so much a philosophic principle as a maxim or saw derived from observation and experience, much like the proverbs: "Birds of a feather," "noscitur a sociis," ὡς αἰεὶ τὸν ὅμοιον ἄγει θεὸς εἰς τὸν ὅμοιον. Cf. *De Sensibus* loc. cit.

(*Doxogr. Gr.* 499, 4) τὸ δὲ πιθανὸν ἔλαβον οἱ μὲν ὅτι τῶν ἄλλων τε τὰ πλεῖστα τῇ ὁμοιότητι θεωρεῖται καὶ ὅτι σύμφυτόν ἐστι πᾶσι τοῖς ζῴοις τὰ συγγενῆ γνωρίζειν, ἔτι δ' ὡς τὸ μὲν αἰσθάνεσθαι τῇ ἀπορροίᾳ γίνεται, τὸ δ' ὅμοιον φέρεται πρὸς τὸ ὅμοιον. The last sentence alludes especially to the theories of sensation put forward, amongst others, by Empedocles and Democritus, who supposed particles emanating (ἀπορροαί) from the object perceived, or as Democritus called them δείκελα (=εἴδωλα), films, to be brought into contact directly or indirectly with the sense-organ (418 b 15, 422 a 15). For A.'s criticism of the maxim as presented by Empedocles, see 410 a 27 sqq., also 427 a 26—b 6, 416 a 29 sqq. One consequence of such a theory is that all the senses become modes of touching. See *De Sensu* 442 a 29 sqq.

b 15 ἐπειδὴ γάρ...19 ποιοῦσιν. A summary recapitulation which helps to explain 404 b 8—11, 405 a 2—4. When A. has interpreted in his own fashion the theories before him, supplying *de suo* the grounds for some of the conclusions reached, he combines them under this general formula. Cf. Them. 14, 25 H., 26, 8 Sp. τὴν μὲν οὖν παραδοθεῖσαν ἡμῖν ἱστορίαν περὶ ψυχῆς διεληλύθαμεν, τὰ μὲν οἷς λέγουσιν ἀκολουθοῦντες, τὰ δὲ οἷς εἰκὸς αὐτοὺς βούλεσθαι λέγειν.

b 16. συνιστᾶσιν, as in b 24. Cf. a 26 συνίστησιν, 404 b 17 ποιεῖ.

b 19 Ἀναξαγόρας δὲ...21 ἔχειν. We return now to 405 b 14 πλὴν ἑνός. The passages from the fragments of Anaxagoras cited in notes on 405 a 16 sq. sufficiently explain why νοῦς is there said to be ἁπλοῦς, ἀμιγής, καθαρὸς and here κοινὸν οὐθὲν οὐθενὶ τῶν ἄλλων ἔχειν (repeated 429 b 23 sq.). With regard to ἀπαθῆ the case is different: the presumption of a verbal citation in 429 b 23 raised by ὥσπερ φησὶν Ἀναξαγόρας need not extend beyond the words immediately preceding καὶ μηθενὶ μηθὲν ἔχει κοινόν. It seems best therefore to regard ἀπαθῆ as A.'s own inference. The extant words which most nearly approach this idea are *frag.* 12 D. ἀλλὰ μόνος αὐτὸς ἐφ' ἑαυτοῦ ἐστιν. εἰ μὴ γὰρ ἐφ' ἑαυτοῦ ἦν, ἀλλά τεῳ ἐμέμεικτο ἄλλῳ...ἂν ἐκώλυεν αὐτὸν τὰ συμμεμειγμένα, ὥστε μηδενὸς χρήματος κρατεῖν ὁμοίως ὡς καὶ μόνον ἐόντα ἐφ' ἑαυτοῦ, but these words hardly go beyond the meaning of ἀμιγής. A. however had convinced himself that Anaxagoras regarded νοῦς as ἀπαθής, see *Phys.* VIII. 5, 256 b 20 ἐπεὶ δ' ὁρῶμεν τὸ ἔσχατον, ὃ κινεῖσθαι μὲν δύναται, κινήσεως δ' ἀρχὴν οὐκ ἔχει, καὶ ὃ κινεῖ μέν, ὑπ' ἄλλου δὲ <κινεῖται>, ἀλλ' οὐχ ὑφ' αὑτοῦ, εὔλογον, ἵνα μὴ ἀναγκαῖον εἴπωμεν, καὶ τὸ τρίτον εἶναι ὃ κινεῖ ἀκίνητον ὄν. διὸ καὶ Ἀναξαγόρας ὀρθῶς λέγει, τὸν νοῦν **ἀπαθῆ** φάσκων καὶ ἀμιγῆ εἶναι, ἐπειδήπερ κινήσεως ἀρχὴν αὐτὸν ποιεῖ εἶναι· οὕτω γὰρ ἂν μόνως κινοίη ἀκίνητος ὢν καὶ κρατοίη ἀμιγὴς ὤν.

The meaning of ἀπαθής in A. is fairly uniform = ὁ μὴ οἷός τε πάσχειν, incapable of suffering, that cannot be acted upon or affected. The Anaxagorean νοῦς is so unlike all other things that it cannot be affected by them, so 408 b 25, 410 a 23, 29, 416 a 32. The definition need not be pressed, cf. *Metaph.* 1019 a 30 ἀπαθῆ δὲ τῶν τοιούτων ἂν μόγις καὶ ἠρέμα πάσχῃ διὰ δύναμιν καὶ τὸ δύνασθαι καὶ τὸ ἔχειν πως. In *Poetic.* 14, 1453 b 39 ἀπαθές seems to mean μὴ ἔχον πάθος. When he regarded mind as having nothing in common with the other things in the universe which are all material, Anaxagoras was on his way to declaring it immaterial, and as we shall see in the sequel (e.g. 408 b 29, 430 a 18) A. uses ἀπαθής combined with other adjectives like θεῖος and χωριστός to express immateriality.

b 21. τοιοῦτος δ' ὢν...22 συμφανές ἐστιν. Cf. 429 b 22 sqq. where the same difficulty recurs in regard to A.'s own theory.

b 23. ὅσοι δ' ἐναντιώσεις ποιοῦσιν. For ἐναντιώσεις ποιοῦσιν Them. substitutes τιθέασιν ἐναντίωσιν. Here A. distinguishes between philosophers who introduced contrariety in their first principles, e.g. Empedocles (cf. 411 a 3)

and those (b 24) who took for their single principle an element which has a contrary, e.g. Heraclitus or Hippon. An attentive perusal of *Phys.* I., c. 5 will show that in his view the distinction is not fundamental. In the explanation of nature and becoming, he maintains, the upholders of a single principle have recourse to contrarieties of some sort (*θερμὸν καὶ ψυχρόν, μανὸν καὶ πυκνόν, στερεὸν καὶ κενόν*). Thus he reaches the conclusion 188 a 26 *ὅτι μὲν οὖν τἀναντία πως πάντες ποιοῦσι τὰς ἀρχάς*. Cf. *Metaph.* 1075 a 28 sq., 1087 a 29 sqq. and 1004 b 29 *τὰ δ' ὄντα καὶ τὴν οὐσίαν ὁμολογοῦσιν ἐξ ἐναντίων σχεδὸν ἅπαντες συγκεῖσθαι· πάντες γοῦν τὰς ἀρχὰς ἐναντίας λέγουσιν· οἱ μὲν γὰρ περιττὸν καὶ ἄρτιον* [some Pythagoreans], *οἱ δὲ θερμὸν καὶ ψυχρόν* [Parmenides in *τὰ πρὸς δόξαν*], *οἱ δὲ πέρας καὶ ἄπειρον* [the Pythagoreans], *οἱ δὲ φιλίαν καὶ νεῖκος* [Empedocles]. Cf. further *Metaph.* 1005 a 3 sq., 1061 a 10—15, *Phys.* I. 6, 189 a 13, b 26. In A.'s own system (*Ind. Ar.* 248 a 27) *αἱ ἐναντιώσεις* tamquam *δεύτερον* ponuntur inter *τὴν ὕλην* et *τὰ στοιχεῖα*, *De Gen. et Corr.* II. 1, 329 a 34, 26, 329 b 18, *De Sensu* 4, 442 b 18 *τὰ αἰσθητὰ πάντα ἔχει ἐναντίωσιν*. According to A. the *tertium quid*, matter, solves the difficulty noticed *Metaph.* 1075 a 29: *πῶς ἐκ τῶν ἐναντίων ἔσται* [how from contraries as principles existing things can be derived] *οὐ λέγουσιν· ἀπαθῆ γὰρ τὰ ἐναντία ὑπ' ἀλλήλων. ἡμῖν δὲ λύεται τοῦτο εὐλόγως τῷ τρίτον τι εἶναι.*

b 24. τὴν ψυχὴν ἐκ τῶν ἐναντίων συνιστᾶσιν. Philop. (91. 33) gives Empedocles as an instance, his four elements and two moving principles being contraries. Upon A.'s own physical theory the true contraries are the qualities of heat and cold, dryness and moisture, which belong to Empedocles' four elements *De Gen. et Corr.* II. 1, 329 a 31 sqq. If the remark applies also to Plato, *ἐναντία* must be understood in his case as loosely used for *ἀντικείμενα.*

b 24. οἱ δὲ θάτερον...26 τιθέασιν. Philop. 92, 2 sqq. cites Heraclitus for *θερμὸν* and Hippon for *ψυχρόν*. Diogenes of Apollonia probably regarded air as *ξηρόν*, see Theophrast. *De Sensibus* § 44, where he attributes *τὸ φρονεῖν* to the dryness of the air inhaled.

b 26. διὸ καὶ τοῖς ὀνόμασιν ἀκολουθοῦσιν. *Ind. Ar.* 26 a 18 *ἀκολουθεῖν τῷ λόγῳ, τῷ νόμῳ, ταῖς δόξαις, ταῖς ὁμοιότησιν, τοῖς φαινομένοις*, *Pol.* 1295 b 8, 1298 a 38, 1273 a 40, *Eth. Nic.* 1137 b 2, 1139 b 19, *Metaph.* 986 b 31, 990 b 21. Similarly we should expect *ὀνόμασιν ἀκολουθοῦσιν* to mean "follow the lead of names," "are guided by etymologies." But this would not suit the context. Philop., who (92, 3 sqq., cf. 2, 3) attributes these etymologies to Heraclitus and Hippon respectively, says quite correctly *ἑκάτερος οὖν τούτων, φησί, καὶ ἐτυμολογεῖν ἐπιχειρεῖ τὸ τῆς ψυχῆς ὄνομα πρὸς τὴν οἰκείαν δόξαν*, i.e. Heraclitus derived *ζῆν* from *ζεῖν* while Hippon derived *ψυχή* from *ψυχρόν* (*ὁ δὲ ψυχὴν κεκλῆσθαι ἐκ τοῦ ψυχροῦ λέγων*). They were not guided by etymology when in search of a first principle, but having adopted their first principle, they found an etymology which would support it. The underlying assumption is of course that the name, when its correct derivation is known, unfolds the true nature of the thing. The *Cratylus* of Plato furnishes many similar examples. Cf. 436 A *εἴ τις ζητῶν τὰ πράγματα ἀκολουθοῖ τοῖς ὀνόμασι, σκοπῶν οἷον ἕκαστον βούλεται εἶναι*. Thus what A. means is that they etymologise to suit their respective theories, *πρὸς τὴν οἰκείαν δόξαν*, as Philop. says.

b 27 οἱ μὲν γὰρ...28 τὸ ζῆν ὠνόμασται. With *λέγοντες* supply *τὴν ψυχὴν εἶναι* and from the participle understand *λέγουσιν* before *ὅτι διὰ τοῦτο* = *διὰ τὸ θερμὸν* or *διὰ τὸ εἶναι τὸ θερμὸν τὴν ψυχήν*. It would be possible to repeat *τοῖς ὀνόμασιν ἀκολουθοῦσιν* but it would be impossible to connect *τοῖς ὀν. ἀκ.* with the accusative and infinitive clause following *οἱ δέ*.

b 28. οἱ δὲ τὸ ψυχρόν, int. *λέγουσιν* or *φασίν*. There is no need precisely

to assimilate the construction of this clause to the foregoing. See critical notes. The whole and part construction with the omission of γὰρ would be tempting, if it did not require us to translate b 27 ὅτι "because." But in that case the etymology would determine the theory and not, as I consider, be adduced in support of it.

b 28. διὰ τὴν ἀναπνοὴν καὶ τὴν κατάψυξιν. The cold air inhaled as breath was supposed to cool the blood, *De Resp.* 8, 474 b 19. This derivation of ψυχὴ is given by Plato *Crat.* 399 D sqq. *οἶμαί τι τοιοῦτον νοεῖν τοὺς τὴν ψυχὴν ὀνομάσαντας, ὡς τοῦτο ἄρα, ὅταν παρῇ τῷ σώματι, αἴτιόν ἐστι τοῦ ζῆν αὐτῷ, τὴν τοῦ ἀναπνεῖν δύναμιν παρέχον καὶ ἀναψῦχον, ἅμα δὲ ἐκλείποντος τοῦ ἀναψύχοντος τὸ σῶμα ἀπόλλυταί τε καὶ τελευτᾷ· ὅθεν δή μοι δοκοῦσιν αὐτὸ ψυχὴν καλέσαι.* As an alternative to this obvious derivation, the Platonic Socrates offers a "more scientific" derivation, connecting ψυχὴ with *φύσιν ἔχειν*. In Aristoph. *Nub.* 627 Socrates uses the oath *μὰ τὴν ἀναπνοήν*, implying that respiration is so essential to life as to be justly deified.

CHAPTER III.

This chapter begins with a criticism of soul as a thing in motion or capable of motion. With the early philosophers, as we have seen in the last chapter, this conception of soul is a necessary inference from the belief that soul is the cause of animal motion (403 b 28—31). A., too, shares the current belief that soul is *κινητικὸν* or *τὸ κινοῦν*, but he disproves in a series of nine arguments the necessity of the inference that it must be *τῶν κινουμένων τι*. There follows a critical examination of the theory of soul laid down in the *Timaeus*, §§ 11—21 (406 b 26—407 b 11). The chapter closes with some suggestive remarks on the futility of defining soul without taking account of the body to which it belongs (§§ 22, 23, 407 b 12—26).

405 b 31—406 a 4. Our first subject of enquiry is motion. The definition of the soul as that which moves itself, or that which is capable of self-motion, is false. It has been already stated that the moving cause is not necessarily itself in motion. Against the proposition that soul is moved the following objections may be urged (which equally apply to the definition of soul as that which moves, or is capable of moving, itself).

406 a 4—12. When anything is said to be in motion this means *either* that the thing moved has a derivative and adventitious motion, *or* that it has an independent motion in and by itself. [The ship moves in the latter way in and by itself, the passengers conveyed by it in the former, through being in something which is itself in motion, as appears from the fact that they do not, in the case supposed, employ their own proper mode of progression with their feet.] In accordance with this distinction we proceed to enquire whether the soul has an independent motion in and by itself.

406 a 12—16. (1) Understanding *κινούμενον* to mean *καθ' αὑτὸ κινούμενον*, and assuming the four species of motion to be qualitative change (*ἀλλοίωσις*), growth (*αὔξησις*), decay (*φθίσις*), spatial motion (*φορά*), we affirm that, if the soul is moved *καθ' αὑτό*, it is moved naturally, *φύσει*, and if it is moved with any of these species of motion the soul must be in space, *ἐν τόπῳ*.

406 a 16—22. (2) Further, on the same presuppositions, if it is the nature of soul to move itself, there will be a locality in the universe towards which as a *φύσει κινούμενον* it tends to move [but there is none such].

406 a 22—27. (3) If the soul is moved naturally, it is also moved by constraint, but of such constrained motions it is impossible to form any idea.

406 a 27—30. (4) According to the doctrine of *De Caelo*, that the nature of which is to be moved upwards is fire, as earth is that the nature of which is to be moved downwards. Consequently the soul must be either fire or earth, according as one or other of these rectilinear motions is attributed to it as its essential nature.

406 a 30—b 5. (5) It is a fact that soul sets body in motion, and it may be reasonably supposed that the motions produced in the body are those to which the soul is itself subject. Hence, *convertendo*, the motion of the soul must be that of the body, viz. spatial motion (φορά), whether the soul moves as a whole or by successive movements of its parts, the whole remaining at rest. If so, it would be possible for the soul to leave the body and return to it, and the resurrection of the dead would cease to be impossible.

406 b 5—11. (6) It may be maintained that the soul is moved indirectly or *per accidens*. [A.'s own opinion, see 408 a 30—34.] In that case such motions might be imparted to it by external agency. But if this be admitted by our opponents, it is inconsistent for them to maintain that something (1) has self-motion in its essence, and (2) is at the same time moved by external agency, unless the concurrence of the impulses from within and from without is merely accidental. The soul however, if it is moved at all, is moved by objects of sense.

406 b 11—15. (7) The self-motion of soul implies not only that it causes motion *quâ* soul and in respect of its essential nature, but also that it is subject to motion *quâ* soul. . Now everything subject to motion or change in whatever respect undergoes a transition or transformation from one condition to another in that respect. If then the soul is moved *quâ* soul, it is always passing out of that condition in which its essential nature consists [in other words, in such movement it quits one condition for another—it is dislodged from the condition of its existence—and loses its essential nature].

406 b 15—25. (8) If it be maintained with Democritus that the soul is subject to exactly the same motions which it communicates to the body, we shall enquire if the soul's remaining at rest is due to the same causes, a result which seems inexplicable. (9) And, generally, the facts show that it is not in this way that the soul moves the body, but through a species of purpose and thought.

As to the method which is followed in the above objections, Bonitz well observes, *Hermes* VII. p. 421, "Gemeinsamer Charakter der einzelnen zur Widerlegung dieser Definition angewendeten Beweise ist, dass Aristoteles seine eignen Lehren über das Wesen, insbesondere über die Arten, der Bewegung als sichere Grundlage voraussetzt und durch Anwendung derselben auf die fragliche Definition zu Consequenzen führt, welche entweder an sich unhaltbar sind oder doch der Absicht derer selbst widerstreiten, welche jene Definition aufgestellt haben." The same method is pursued throughout cc. 3—5 : A. deduces absurd and inconsistent conclusions by combining the doctrines of his own system with the propositions which he undertakes to refute. He does not stop to enquire whether those who maintain these propositions would have accepted the doctrines of his own system. In the present case, there is the further difficulty that the mobility of the soul which he is combating is regarded as one and the same tenet when advanced by two opposite schools, viz. by the Pre-Socratics, of whom Democritus is the type, who considered soul to be something corporeal, and by the Platonists,

who as emphatically declared it to be incorporeal. The cogency of the objections will naturally vary according as they are advanced against the one or the other. No doubt he tries to follow the rule which he lays down *De Caelo* II. 13, 294 b 10 δεῖ τὸν μέλλοντα καλῶς ζητήσειν ἐνστατικὸν εἶναι διὰ τῶν οἰκείων ἐνστάσεων τῷ γένει. The supply of objections is inexhaustible: but their relevancy to the subject is just what his opponents would dispute. In c. 4 he deals with harmony exactly as here he deals with motion.

405 b 31 ἴσως γὰρ...406 a 2 κίνησιν. Two propositions are here repudiated as untrue and even impossible. The first is the proposition that soul is that which moves itself, as defined by Plato in the *Laws* (see note on 404 a 21). The second is the more general proposition that motion in any sense is an essential attribute of soul. In other words, it is false to say that soul moves itself, and further it is false to say that soul is moved at all. The term motion is used throughout in a wider sense than in the present day, viz. to express several varieties of change. To render it more precise A. often affixes μεταβολή (just as Plato does, e.g. *Laws* 894 A, C, E and 895 A, etc., v. Stallb. ad 893 C, p. 161, 894 C, p. 165), κίνησις καὶ μεταβολή, motion, that is to say, change, *Phys.* IV. 10, 218 b 19 μηδὲν διαφερέτω λέγειν ἡμῖν ἐν τῷ παρόντι κίνησιν ἢ μεταβολήν. Sometimes, however, κίνησις is made a species of μεταβολή: cf. *Phys.* V. 5, 229 a 31, b 13 sq. As we shall see below (406 a 12) motion includes not only (*a*) φορά, spatial motion, change of place, locomotion, κατὰ τόπον, the meaning which we now attach to the term motion, but also (*b*) αὔξησις, growth and φθίσις, decay, two forms of quantitative change, κατὰ τὸ ποσόν, and (*c*) ἀλλοίωσις, qualitative change, the internal alteration or transformation which the thing changed undergoes when, though it remains in being, it is modified in respect of its condition or character, κατὰ τὸ ποῖον. These are the three species of motion finally recognised by A. in the *Physics*, where he employs the word as a scientific term and determines its connotation. Though his language varies, he must be taken to exclude from κίνησις proper the sense of γένεσις καὶ φθορά, generation and destruction. See note on 406 a 12. For A.'s attempt to reduce the other species to φορά, spatial motion, see note on a 16 *inf.* Finally what A. means by motion (κίνησις) must be carefully distinguished in another direction from what he means by ἐνέργεια, active operation or actualisation. On this important question there will be more to say later, e.g. 417 a 15—17, 425 b 26—426 a 8, 431 a 1—7.

406 a 1. ἢ δυνάμενον κινεῖν, int. ἑαυτό. Them. 14, 29 H., 26, 14 Sp. ὡς καὶ τὸν ὅρον αὐτῆς τοιοῦτον ἀποδιδόναι, ψυχὴν εἶναι τὸ κινοῦν ἑαυτὸ ἢ δυνάμενον κινεῖν ἑαυτό· οὕτω γὰρ καὶ Πλάτων ἐν τῷ δεκάτῳ τῶν Νόμων (viz. 896 A). The exact words are τὴν δυναμένην αὐτὴν αὑτὴν κινεῖν κίνησιν (see the context cited in *note* on 404 a 21).

a 3. πρότερον. Philop. and Them. refer us to the *Physics*, where, in VIII. 5, 256 b 23 sq., it is argued that not everything which causes motion is necessarily itself moving: and in the last resort we must postulate a prime movent (πρῶτον κινοῦν) itself unmoved. Cf. *Metaph.* 1072 a 25, *Phys.* VIII. 5, 258 b 7 ἀμφοτέρως συμβαίνει τὸ πρώτως κινοῦν ἐν ἅπασιν εἶναι τοῖς κινουμένοις ἀκίνητον. ἐπεὶ δὲ δεῖ κίνησιν ἀεὶ εἶναι καὶ μὴ διαλείπειν, ἀνάγκη εἶναί τι ἀΐδιον ὃ πρῶτον κινεῖ, εἴτε ἓν εἴτε πλείω, καὶ τὸ πρῶτον κινοῦν ἀκίνητον. Bonitz, however, declines to accept this reference. Cf. *Ind. Ar.* 99 a 1 *Phys.* VIII. 5; quod Trdlbg *de an.* I. 2. 403 b 29 respici putat, probari non potest. Them. (14, 33—15, 17 H., 26, 20—27, 21 Sp.) gives a good abstract of the argument in the *Physics*.

a 4. διχῶς. The distinction is between independent and derivative motion, i.e. change, generally: not primarily, as the illustration might suggest, between direct and indirect locomotion (e.g. the free motion of the ship and

the motion, by conveyance, of the passenger). It is a metaphysical or logical (cf. a 10, *λεγομένου*) not a physical distinction. The principle on which it depends can be best understood if we go back to the fundamental antithesis between the logical subject and its accidents or attributes. Change or motion is predicated of the various substances or things, regarded as particulars. Each of these is a distinct something or whole, *τόδε τι* or *ὅλον*, and the motion predicated of it belongs to it as such, *τῷ εἶναι αὐτὸ ὅ ἐστι καθ' αὐτό*, because it is what it is, independently of all other existing things. Thus *καθ' αὑτὸ* is explained by *κατὰ τὴν οὐσίαν*. But besides the wholes which thus exist and are moved independently, we must take account of parts and accidents, the existence of which is conditioned by that of the things to which as parts and accidents they belong. Of such parts and accidents motion can also be predicated, but their motion, like their existence, will not be independent and unconditioned, but dependent, derivative and conditioned. In the *Physics* this distinction is usually expressed by *κατὰ συμβεβηκὸς κινούμενον* as opposed to *καθ' αὑτὸ κινούμενον*, where *κατὰ συμβ.* conveys the idea of accessory, concomitant or adventitious. By a vague or extended use of the phrase *τὰ κατὰ συμβ. κινούμενα* are sometimes made to include parts of a whole as well as accidents, both parts and accidents being regarded as accessories or concomitants. See e.g. *Phys.* VIII. 4, 254 b 7—12, as contrasted with the more precise distinctions of *Phys.* V. 1, 224 a 21—34, and compare Simpl. *in Phys.* 1207, 15 *τὰ γὰρ ὑπάρχοντα τοῖς καθ' αὑτὸ κινοῦσιν ἢ κινουμένοις ἢ ὡς μέρη ἢ ὡς πάθη ἢ ὡς ἕξεις ἢ ὡς ὄργανα ἢ ἄλλως ὁπωσοῦν, ταῦτα λέγεται κατὰ συμβεβηκὸς κινεῖν ἢ κινεῖσθαι*: and Simpl. *in Phys.* 554, 23 *κυριωτάτη γὰρ ἀντίθεσις τοῦ καθ' αὑτὸ πρὸς τὸ καθ' ἕτερον οἷον τὸ κατὰ μέρος, ὡς νῦν* [*Phys.* 210 a 27], *ἤ τι ἔξωθεν, ὅτε τὸ κυρίως κατὰ συμβεβηκὸς ποιεῖ.* "Other" may be interpreted to mean a part of the first thing, part being distinct from whole, or a second thing wholly distinct from the first. Language, we must remember, is apt to designate the whole of a thing from its parts (*Phys.* IV. 3, 211 b 1). The choice of *καθ' ἕτερον* instead of *κατὰ συμβεβηκὸς* enables A. to include the case of the passenger, who is, strictly speaking, neither a part nor an accident of the ship which conveys him, though, *quá* moved, he may be regarded for the time being as one or the other, since his motion in the case supposed is as much conditioned by that of the ship as if he were the ship's mast or its tonnage. Cf. Simpl. *in Phys.* 802, 17 *διορίζει πρῶτον τὰς τῆς μεταβολῆς διαφοράς, τὴν μὲν κατὰ συμβεβηκὸς λέγων......ὅταν τὸν ἐν τῇ νηῒ ἠρεμοῦντα πλωτῆρα λέγωμεν κινεῖσθαι, ὅτι ἡ ναῦς, ᾗ τρόπον τινὰ συμβέβηκεν ὁ πλωτήρ, καθ' αὑτὴν κινεῖται καὶ μεταβάλλει.* Strictly speaking, the ship and its contents, and most probably the man on horseback, are artificial systems, each with its own *κινοῦν* and *κινούμενον*, just as the *ζῷον* is a similar natural system. See *Phys.* VIII. 4, 254 b 12—17, 27—33. The latter passage ends thus: *ἔοικε γὰρ ὥσπερ ἐν τοῖς πλοίοις καὶ τοῖς μὴ φύσει συνισταμένοις, οὕτω καὶ ἐν τοῖς ζῴοις εἶναι διῃρημένον τὸ κινοῦν καὶ τὸ κινούμενον, καὶ οὕτω τὸ ἅπαν αὐτὸ αὑτὸ κινεῖν.*

a 4 καθ' ἕτερον...5 καθ' αὑτό, *per aliud...per se*, indirectly...directly. These phrases, like *κατὰ συμβεβηκός...καθ' αὑτό* (*per accidens...per se*) in the *Physics*, express the manner: they answer the question "How is the thing moved?" English has no preposition to express *κατὰ* in this connexion as distinct from *ὑπὸ* c. gen. (Latin *ab*), but "in respect of," "in virtue of" come near to it. The attribute whiteness (a 18) is moved in virtue or in respect of its concomitance with the body of which it is an attribute. We may note parenthetically the bilateral use of *κατά*: *Phys.* V. 1, 224 a 23 *τὸ δὲ τῷ τούτου τι μεταβάλλειν ἁπλῶς λέγεται μεταβάλλειν, οἷον ὅσα λέγεται κατὰ μέρη* [int. *μεταβάλλειν*]· *ὑγιάζεται γὰρ τὸ*

σῶμα, ὅτι ὁ ὀφθαλμὸς ἢ ὁ θώραξ, ταῦτα δὲ μέρη τοῦ ὅλου σώματος. Here, be it observed, the whole is "moved" (e.g. healed) in respect or in virtue of a part. Cf. *Phys.* VIII. 4, 254 b 7—12. Thus, then, *κατὰ* expresses the logical relation of dependence in the order of thought. We can think of the motion of a ship without implying motion of a passenger: we cannot think of the motion of the passenger from port to port without implying that of the ship. As is pointed out by Them. (15, 21 H., 27, 27 Sp.) and by Simpl. (*in Phys.* 802, 19), the passengers may be assumed to be at rest in the ship, for in any case their walking up and down the deck is not the species of motion with which they and the ship are propelled: and it is the latter motion alone with which the argument is here concerned. If the passenger misses the vessel, walking, his own mode of progression, will not avail him in the water. If this holds when B, *τὸ καθ' ἕτερον κινούμενον*, is a particular thing separately existing, it holds *a fortiori* when B is a part (whether *μόριον συμφυὲς* or *συνεχές*) of A, *τὸ καθ' αὑτὸ κινούμενον*, by whose motion its own is conditioned: or again when B is an accident, whiteness or the height of three cubits (a 18) of A. For, as we saw, neither part nor accident can be thought of as existing, much less as being moved, independently of the particular thing, *οὐσία* or *τόδε τι*, in which it inheres. It would be a mistake, then, to treat *κατὰ* as simply equivalent to *ὑπό*. See *Phys.* VIII. 4, 254 b 12 *τῶν δὲ καθ' αὑτὰ τὰ μὲν ὑφ' ἑαυτοῦ τὰ δ' ὑπ' ἄλλου* [int. *κινεῖται*]. The passenger might conceivably propel the vessel by rowing, but in that case it would still be true of him *οὐ καθ' αὑτὸν ἀλλὰ καθ' ἕτερον κινεῖται*, viz. *τῷ ἐν κινουμένῳ εἶναι.*

a 5. τῷ ἐν κινουμένῳ εἶναι. The phrase *ἔν τινι εἶναι* has a wide meaning. It could be applied to the parts of a whole or the accidents of a logical subject, e.g. *λευκόν, τρίπηχυ.* Them. 15, 22 H., 28, 1 Sp. *οὕτω δ' ἂν φαίης καὶ τὰ συμβεβηκότα τοῖς σώμασιν οἷον λευκότητα μελανίαν τὸ δίπηχυ καὶ τρίπηχυ κινεῖσθαι, καθ' ἕτερον δέ, τῷ ἐν κινουμένοις ὑπάρχειν· τὰ δὲ τοῦτον τὸν τρόπον κινούμενα ἐνδέχεται μήτε σώματα εἶναι μήτε προσδεῖσθαι τόπου καθ' ἑαυτά.* If the reader consults *Phys.* IV. 3 with the valuable commentary of Simplicius he will not merely find a supplement to A.'s vocabulary of philosophical terms, *Metaph.* Δ., but will derive considerable assistance for the proper understanding of the antithesis between *καθ' αὑτὸ* and *κατ' ἄλλο* (*ἕτερον*), which often recurs, e.g. 429 b 27, where it is used to determine the meaning of *νοητός*.

a 8. δῆλον δ' ἐπὶ τῶν μορίων, *ὅτι οὐκ ἔστι τοῦ πλωτῆρος οἰκεία ἡ τοιαύτη κίνησις* (motion of conveyance). If his locomotion were independent and due to himself, not accessory and derivative, the passenger would be walking, not sailing in the ship.

a 9. βάδισις, the appropriate species of locomotion, *φορά*, as distinct from *πτῆσις, ἕρψις, νεῦσις, ἅλσις*, which are severally appropriate to other animals: *De Part. An.* I. 1, 639 b 3, *Eth. Nic.* 1174 a 31.

a 12. καὶ μετέχει. Probably *καὶ* is explicative and *μετέχει κινήσεως* simply duplicates *κινεῖται*. In a 21 *εἴπερ φύσει κινήσεως μετέχει* seems to take up the conclusion of (a 15) *φύσει ἂν ὑπάρχοι κίνησις αὐτῇ*, and it is followed (in a 22) by *ἔτι δ' εἰ φύσει κινεῖται*, as if all three were equivalent phrases. In any case *καθ' αὑτὴν* must be taken with *μετέχει* as well as with *κινεῖται*. I follow Trend. in rejecting the attempt of Philop. to give a different sense to *μετέχει κινήσεως*: Philop. 98, 10 *τὰ μὲν συνουσιωμένην ἔχει τὴν κίνησιν...ὡς τὰ οὐράνια, τὰ δὲ συνουσιωμένην μὲν αὐτὴν οὐκ ἔχει...τὴν μέντοι δύναμιν τοῦ κινεῖσθαι ἐν τῇ φύσει ἔχουσιν, ὥστε δύνασθαι μετέχειν τῆς κινήσεως, ὅταν ᾖ τὸ κινοῦν, ὡς ἡ βῶλος.*

a 12. τεσσάρων. See note on 405 b 31 *supr.* where *three* distinct species of change or motion in the wider sense are enumerated. This is the mature

view, *γένεσις καὶ φθορὰ* being excluded, as not properly *κίνησις* (*Phys.* V. 1, 225 a 26, 32): *Ind. Ar.* 391 b 36 adduces *Phys.* II. 1, 192 b 14, V. 1, 225 b 7, V. 2, 226 a 25, VII. 2, 243 a 6, VIII. 7, 260 a 27, *De Cael.* IV. 3, 310 a 23, *Metaph.* 1068 a 10, b 17. In spite of *τεσσάρων* this is virtually the doctrine of the present passage. The number "four" is made up by distinguishing "growth" (*αὔξησις*) from "waning" or "decay" (*φθίσις*): whereas these are merely the positive and negative aspects of quantitative change (*κατὰ τὸ ποσόν, κατὰ μέγεθος*), i.e. increase and diminution. The reason assigned by Simplicius and Philoponus is doubtless correct, viz. that there is no common term in Greek comprehending both *φθίσις* and *αὔξησις* and so corresponding to *ἀλλοίωσις* and *φορά*. In *Categ.* 14, 15 a 13, the writer by adding *γένεσις* and *φθορά*, as two separate species, to the four here enumerated constructs a list of six *εἴδη κινήσεως*.

a 13. κινοῖτ' ἄν. This chapter affords many instances of the opt. with *ἄν* expressing the logical consequence as a 15 *ἂν ὑπάρχοι*, a 22 *κἂν κινηθείη*, b 4 *ἐνδέχοιτ' ἄν* and *ἕποιτ' ἄν*, b 12 *κινοῖτ' ἂν* and b 13 *ἐξίσταιτ' ἄν*, 407 a 21 *ἂν εἴη*, 407 b 2 *ἂν κινοῖτο*. Cf. *note* on 403 a 9. For the future indicative as an equivalent compare 406 a 18 *ὑπάρξει*, 407 a 10 *νοήσει*, a 14 *διέξεισιν*, and *νοήσει*.

a 14 εἰ δὲ κινεῖται...15 αὐτῇ. The protasis must follow from the definition of soul impugned above (405 b 31—406 a 2). See below 406 a 16—19. If motion is not an accidental or adventitious attribute but belongs to the essence of this unknown X, the soul, the soul must be assigned to the domain of nature and not to the domain of art. Motion is found in both, but what is subject to motion is a natural object, a product of nature, only when it contains within itself the principle of motion: *Phys.* II. 1, 192 b 13 *τὰ μὲν γὰρ φύσει ὄντα πάντα φαίνεται ἔχοντα ἐν ἑαυτοῖς ἀρχὴν κινήσεως καὶ στάσεως, τὰ μὲν κατὰ τόπον, τὰ δὲ κατ' αὔξησιν καὶ φθίσιν, τὰ δὲ κατ' ἀλλοίωσιν.* Anything which does not possess within itself such a principle of motion must be assigned to the products of art or manufactured articles, e.g. *κλίνη* or *ἱμάτιον*, although the materials of which they are made are natural objects: 192 b 15 *κλίνη δὲ καὶ ἱμάτιον, καὶ εἴ τι τοιοῦτον ἄλλο γένος ἐστίν, ᾗ μὲν τετύχηκε τῆς κατηγορίας ἑκάστης καὶ καθ' ὅσον ἐστὶν ἀπὸ τέχνης, οὐδεμίαν ὁρμὴν ἔχει μεταβολῆς ἔμφυτον, ᾗ δὲ συμβέβηκεν αὐτοῖς εἶναι λιθίνοις ἢ γηΐνοις ἢ μικτοῖς ἐκ τούτων, ἔχει, καὶ κατὰ τοσοῦτον, ὡς οὔσης τῆς φύσεως ἀρχῆς τινὸς καὶ αἰτίας τοῦ κινεῖσθαι καὶ ἠρεμεῖν ἐν ᾧ ὑπάρχει πρώτως καθ' αὑτὸ καὶ μὴ κατὰ συμβεβηκός.* To explain *μὴ κατὰ συμβεβηκός* A. then gives the illustration of the physician who treats himself and so is at the same time *ἰατρὸς* and *ὑγιαζόμενος*, but it is only *κατὰ συμβεβηκὸς* and not *καθ' ἑαυτὸν* that *ὁ ὑγιαζόμενος* is in this instance *ἰατρός*: 192 b 22 *λέγω δὲ τὸ μὴ κατὰ συμβεβηκός, ὅτι γένοιτ' ἂν αὐτὸς αὑτῷ τις αἴτιος ὑγιείας ὢν ἰατρός· ἀλλ' ὅμως οὐ καθὸ ὑγιάζεται τὴν ἰατρικὴν ἔχει, ἀλλὰ συμβέβηκε τὸν αὐτὸν ἰατρὸν εἶναι καὶ ὑγιαζόμενον· διὸ καὶ χωρίζεταί ποτ' ἀπ' ἀλλήλων* [int. *ὁ ἰατρὸς καὶ ὁ ὑγιαζόμενος*]. *ὁμοίως δὲ καὶ τῶν ἄλλων ἕκαστον τῶν ποιουμένων· οὐδὲν γὰρ αὐτῶν ἔχει τὴν ἀρχὴν ἐν ἑαυτῷ τῆς ποιήσεως, ἀλλὰ τὰ μὲν ἐν ἄλλοις καὶ ἔξωθεν, οἷον οἰκία καὶ τῶν ἄλλων τῶν χειροκμήτων ἕκαστον, τὰ δ' ἐν αὑτοῖς μὲν ἀλλ' οὐ καθ' αὑτά, ὅσα κατὰ συμβεβηκὸς αἴτια γένοιτ' ἂν αὑτοῖς* [int. *τῆς ποιησέως*]. Cf. *Phys.* VIII. 4, 254 b 14 *τό τε γὰρ αὐτὸ ὑφ' αὑτοῦ κινούμενον φύσει κινεῖται, οἷον ἕκαστον τῶν ζῴων· κινεῖται γὰρ τὸ ζῷον αὐτὸ ὑφ' αὑτοῦ, ὅσων δ' ἡ ἀρχὴ ἐν αὑτοῖς τῆς κινησέως, ταῦτα φύσει φαμὲν κινεῖσθαι.* Cf. Pl. *Laws* 895 C.

a 15. εἰ δὲ τοῦτο, int. *οὕτως ἔχει*. Cf. a 32. **καὶ τόπος,** int. *ἂν ὑπάρχοι αὐτῇ*.

a 16. πᾶσαι γὰρ...ἐν τόπῳ. Otherwise expressed, two of the three species of motion (or three of the four above enumerated) imply *φορά*, spatial motion, and therefore cannot take place except in space. For growth and decay compare *Phys.* VIII. 7, 260 b 13 *ἀλλὰ μὴν καὶ τοῦ αὐξανομένου καὶ φθίνοντος*

μεταβάλλει κατὰ τόπον τὸ μέγεθος. *De Gen. et Corr.* I. 5, 320 a 18 τὸ δ' αὐξανόμενον καὶ τὸ φθῖνον [int. φαίνεται ἐξ ἀνάγκης μεταβάλλον κατὰ τόπον], ἄλλον δὲ τρόπον τοῦ φερομένου. τὸ μὲν γὰρ φερόμενον ὅλον ἀλλάττει τόπον, τὸ δ' αὐξανόμενον ὥσπερ τὸ ἐλαυνόμενον· τουτοῦ γὰρ μένοντος τὰ μόρια μεταβάλλει κατὰ τόπον...τὰ δὲ τοῦ αὐξανομένου [int. μεταβάλλει] ἀεὶ ἐπὶ πλείω τόπον, ἐπ' ἐλάττω δὲ τὰ τοῦ φθίνοντος. Since ἀλλοίωσις implies an agent and patient, that which produces and that which suffers the alteration or transformation, and these two can only be brought together in actual contact by spatial motion, it follows that spatial motion is also necessarily implied in ἀλλοίωσις. *Phys.* VIII. 7, 260 b 1 ἀλλὰ μὴν εἴ γε ἀλλοιοῦται, δεῖ τι εἶναι τὸ ἀλλοιοῦν καὶ ποιοῦν ἐκ τοῦ δυνάμει θερμοῦ τὸ [om. τὸ codd. E K] ἐνεργείᾳ θερμόν. δῆλον οὖν ὅτι τὸ κινοῦν οὐχ ὁμοίως ἔχει, ἀλλ' ὁτὲ μὲν ἐγγύτερον ὁτὲ δὲ πορρώτερον τοῦ ἀλλοιουμένου ἐστίν. ταῦτα δ' ἄνευ φορᾶς οὐκ ἐνδέχεται ὑπάρχειν, 260 b 7 ἔτι δὲ πάντων τῶν παθημάτων ἀρχὴ πύκνωσις καὶ μάνωσις... πύκνωσις δὲ καὶ μάνωσις σύγκρισις καὶ διάκρισις, καθ' ἃς γένεσις καὶ φθορὰ λέγεται τῶν οὐσιῶν. συγκρινόμενα δὲ καὶ διακρινόμενα ἀνάγκη κατὰ τόπον μεταβάλλειν, *De Gen. et Corr.* I. 6, 322 b 9 ἀλλὰ μὴν οὐδ' ἀλλοιοῦσθαι δυνατόν, οὐδὲ διακρίνεσθαι καὶ συγκρίνεσθαι, μηδενὸς ποιοῦντος μηδὲ πάσχοντος...22 οὔτε γὰρ ποιεῖν ταῦτα καὶ πάσχειν δύναται κυρίως ἃ μὴ οἷόν τε ἅψασθαι ἀλλήλων...32 ὅμως δὲ τὸ κυρίως λεγόμενον [int. ἁφὴ] ὑπάρχει τοῖς ἔχουσι θέσιν. θέσις δ' οἷσπερ καὶ τόπος. Thus τόπος = space: *Ind. Ar.* 767 a 26, aliquoties pro synonymo χώρα legitur, veluti *Phys.* IV. 1, 208 b 7, 209 a 8, 2, 209 b 15 etc. Properly τόπος is the portion of space which a body fills: *Phys.* IV. 4, 212 a 20 τὸ τοῦ περιέχοντος πέρας ἀκίνητον πρῶτον: cf. 212 a 14 ἔστι δ' ὥσπερ τὸ ἀγγεῖον τόπος μεταφορητός, οὕτω καὶ ὁ τόπος ἀγγεῖον ἀμετακίνητον.

a 20. ᾧ γὰρ ὑπάρχουσιν, int. τὸ λευκὸν καὶ τὸ τρίπηχυ. That which has the quality white or the length of three cubits may be in motion; and so incidentally the quality or quantity in question may be said to be moved. *Phys.* IV. 4, 211 a 22 ταῦτα (i.e. ἡ λευκότης καὶ ἡ ἐπιστήμη) γὰρ οὕτω μεταβέβληκε τὸν τόπον, ὅτι ἐν ᾧ ὑπάρχουσι μεταβάλλει. This, be it remarked, is precisely the way in which, on A.'s own theory, soul is moved, viz. as being practically the form of a concrete living thing (ζῷον ἔμψυχον or σύνολον) which has motion. Cf. *infr.* 408 a 30—34.

a 21. οὐκ ἔστι τόπος αὐτῶν. There is no place assignable for the quality white or the length three cubits, but only for the concrete things to which they respectively belong, i.e. to the existences (οὐσίαι) of which they are, in the widest sense, accidents (συμβεβηκότα). **τῆς δὲ ψυχῆς ἔσται,** int. τόπος. The argument amounts to this:—If soul is a thing to which the attribute motion essentially or of its own nature belongs, then it will be in space, and, what is more, will have a place peculiar to it, a region in the universe to which it tends. Them. 15, 34 H., 28, 18 Sp. εἰ δὴ σῶμα ἡ ψυχή, δῆλον ὅτι καὶ τόπον οἰκεῖον ἕξει. τίνα οὖν τοῦτον; εἰς ἐκεῖνον γὰρ φύσει κινήσεται καὶ γενομένη ἐν ἐκείνῳ φύσει ἠρεμήσει. Thus Them. gives τόπος a different meaning here (a 21) from that which it has above (a 16). This is plausible, for otherwise, as M. Rodier remarks, A. would elaborate a second argument to obtain a conclusion already reached almost at a step.

a 22 ἔτι δ' εἰ...23 καὶ φύσει. Aut scribendum est εἴ τι aut certe intelligendum. Quae enim sequuntur ostendunt haec in universum dici, non de sola anima (Torstrik). This proposition holds of the four simple bodies, fire, air, earth and water; each of which has its natural rectilinear motion, upward from the centre of the universe to its circumference, or downward from the circumference to the centre, according to its own proper region or locality (τόπος οἰκεῖος) and yet may be constrained to move in the opposite or some other

direction. Similarly its tendency to move with its natural motion may be counteracted, and it may be thus brought to a standstill. Thus fire (according to A.) is a simple body whose natural motion is upwards; but the pressure of the air, as in a strong wind, may either cause the flames to go actually downwards, or at any rate may hinder them from ascending: βίᾳ = παρὰ φύσιν. Cf. *Phys.* V. 6, 230 a 29, *De Resp.* 472 a 18. Or, as each simple body has its own proper motion, a constrained or unnatural motion = that which naturally belongs to some other body: *De Cael.* I. 2, 269 a 7 βίᾳ μὲν γὰρ ἐνδέχεται τὴν ἄλλου καὶ ἑτέρου (int. κίνησιν φέρεσθαι), κατὰ φύσιν δὲ ἀδύνατον, εἴπερ μία ἑκάστου κίνησις ἡ κατὰ φύσιν τῶν ἁπλῶν. Our first proposition is stated again *De Cael.* III. 2, 300 a 23 ἀλλὰ μὴν εἰ παρὰ φύσιν ἐστί τις κίνησις, ἀνάγκη εἶναι καὶ κατὰ φύσιν, παρ' ἣν αὕτη· καὶ εἰ πολλαὶ αἱ παρὰ φύσιν, τὴν κατὰ φύσιν μίαν· κατὰ φύσιν μὲν γὰρ ἁπλῶς, παρὰ φύσιν δ' ἔχει πολλὰς ἕκαστον. The converse is stated *De Gen. et Corr.* II. 6, 333 b 26 ἔτι δ' ἐπεὶ φαίνεται καὶ βίᾳ καὶ παρὰ φύσιν κινούμενα τὰ σώματα καὶ κατὰ φύσιν, οἷον τὸ πῦρ ἄνω μὲν οὐ βίᾳ, κάτω δὲ βίᾳ, τῷ δὲ βίᾳ τὸ κατὰ φύσιν ἐναντίον, ἔστι δὲ τὸ βίᾳ· ἔστιν ἄρα [the apodosis begins] καὶ τὸ κατὰ φύσιν κινεῖσθαι. Also *Phys.* IV. 8, 215 a 1 πρῶτον μὲν οὖν [int. λεκτέον] ὅτι πᾶσα κίνησις ἢ βίᾳ ἢ κατὰ φύσιν. ἀνάγκη δ' ἄν περ ᾖ βίαιος, εἶναι καὶ τὴν κατὰ φύσιν· ἡ μὲν γὰρ βίαιος παρὰ φύσιν ἐστίν, ἡ δὲ παρὰ φύσιν ὑστέρα τῆς κατὰ φύσιν, *De Cael.* I. 7, 274 b 30 ἢ γὰρ κατὰ φύσιν κινηθήσεται ἢ βίᾳ· καὶ εἰ βίᾳ, ἔστιν αὐτῷ καὶ ἡ κατὰ φύσιν (sc. κίνησις).

a 23 τὸν αὐτὸν δὲ τρόπον ἔχει καὶ περὶ ἠρεμίας...26 βίᾳ. Similarly *De Cael.* I. 8, 276 a 22 ἅπαντα γὰρ καὶ μένει καὶ κινεῖται βίᾳ καὶ κατὰ φύσιν, καὶ κατὰ φύσιν μέν, ἐν ᾧ μένει μὴ βίᾳ, καὶ φέρεται, καὶ εἰς ὃν φέρεται, καὶ μένει, ἐν ᾧ δὲ βίᾳ [sc. μένει], καὶ φέρεται βίᾳ, καὶ εἰς ὃν βίᾳ φέρεται, βίᾳ καὶ μένει. Cf. II. 13, 295 a 2—7, whence it is argued that, if the earth is at rest βίᾳ, it must have been brought into its present position at the centre of the world δινήσει (295 a 9 εἰ βίᾳ νῦν ἡ γῆ μένει, καὶ συνῆλθεν ἐπὶ τὸ μέσον φερομένη διὰ τὴν δίνησιν).

a 27. οὐδὲ πλάττειν βουλομένοις, "even if we chose to allow fancy free play." Cf. 411 b 18 and *De Cael.* III. 1, 299 b 16 πῶς διοριοῦσι μὴ βουλόμενοι πλάττειν; *frag.* 173, 1506 b 44 οὐδ' ἐγένετο [sc. τὸ τεῖχος], ὁ δὲ πλάσας ποιητὴς ἠφάνισεν. There is here an obvious allusion to the Platonic myths. The verb πλάττειν is frequent in Plato in this sense, but metaphorically of fashioning speech, e.g. *Apol.* 17 C πλάττοντι λόγους, and in this more extended sense of imagining or inventing (fingere animo) as e.g. *Phaedr.* 246 C πλάττομεν οὔτε ἰδόντες οὔθ' ἱκανῶς νοήσαντες θεόν, *Laws* 712 B πλάττειν τῷ λόγῳ τοὺς νόμους, *Rep.* 588 B εἰκόνα πλάσαντες τῆς ψυχῆς λόγῳ, *Tim.* 26 E μὴ πλασθέντα μῦθον, ἀλλ' ἀληθινὸν λόγον. The passage last cited opposes πλασθεὶς to ἀληθινὸς and illustrates the Aristotelian use of πλάσμα and πλασματίας for fiction and fictitious.

a 28. τούτων γὰρ τῶν σωμάτων αἱ κινήσεις αὗται, as explained in *De Cael.* IV., cc. 3, 4, e.g. 311 a 19 φαίνεται πυρὸς μὲν τὸ τυχὸν μέγεθος ἄνω φερόμενον, ἐὰν μή τι τύχῃ κωλῦον ἕτερον, γῆς δὲ κάτω. Cf. *ib.* III. 5, 304 b 17 ὥσπερ καὶ τὸ πῦρ ὅσῳ ἂν πλεῖον γίγνηται, φέρεται θᾶττον ἄνω τὴν αὑτοῦ φοράν, IV. 2, 308 b 13 νῦν γὰρ τὸ μὲν πῦρ ἀεὶ κοῦφον καὶ ἄνω φέρεται, ἡ δὲ γῆ καὶ τὰ γεηρὰ πάντα κάτω καὶ πρὸς τὸ μέσον.

a 29. ὁ δ' αὐτὸς λόγος καὶ περὶ τῶν μεταξύ, int. κινήσεων, as Barco saw. The elements air and water rise above earth but sink below fire. Their motions, then, being directed to quarters of the universe intermediate between the extremity and the centre, may be justly termed "intermediate motions." "The same argument" is as follows: if the soul tends to move towards the intermediate regions of the universe, it will be composed of either air or

water, since these are the elements which naturally tend to move towards the localities intermediate to the centre and the extremity of the universe. See the chapters referred to in the last note, especially *De Cael.* IV. 4, 311 a 22 ἄλλως δὲ βαρὺ καὶ κοῦφον, οἷς ἀμφότερα ὑπάρχει· καὶ γὰρ ἐπιπολάζουσί τισι καὶ ὑφίστανται, καθάπερ ἀὴρ καὶ ὕδωρ· ἁπλῶς μὲν γὰρ οὐδέτερον τούτων κοῦφον ἢ βαρύ· γῆς μὲν γὰρ ἄμφω κουφότερα (ἐπιπολάζει γὰρ αὐτῇ τὸ τυχὸν αὐτῶν μόριον), πυρὸς δὲ βαρύτερα (ὑφίσταται γὰρ αὐτῶν ὁπόσον ἂν ᾖ μόριον), πρὸς ἑαυτὰ δὲ ἁπλῶς τὸ μὲν βαρὺ τὸ δὲ κοῦφον· ἀὴρ μὲν γὰρ ὁπόσος ἂν ᾖ, ἐπιπολάζει ὕδατι, ὕδωρ δὲ ὁπόσον ἂν ᾖ, ἀέρι ὑφίσταται. The result is summed up c. 5, 312 a 26 καὶ ὕδωρ μὲν πλὴν γῆς πᾶσιν ὑφίσταται, ἀὴρ δὲ πλὴν πυρὸς πᾶσιν ἐπιπολάζει.

a 31. κινεῖν τὰς κινήσεις, "move it with those motions," i.e. "impart those motions." For the contained accusative with the transitive verb cf. *infr.* 432 b 13 τί τὸ κινοῦν τὴν πορευτικὴν κίνησιν and with the middle or passive *supr.* 406 a 13 sq., *infr.* a 32 sq., b 5 sq., 410 b 20, *Ind. Ar.* 391 a 16—21: and for the argument *Phys.* VIII. 5, 257 b 25 ἔτι ἣν κινεῖ κίνησιν, καὶ κινοῖτ' ἄν.

a 32. ἀντιστρέψασιν, "convertendo," "conversely," the logical term which denotes the inference of a new proposition, having for its subject the predicate and for its predicate the subject of the proposition from which the inference is drawn. Thus from the proposition, Some philosophers were Athenians, we may infer *convertendo* that some Athenians were philosophers. By thus converting the proposition we no longer make that which is prior in the order of causation prior for knowledge, but conversely; i.e. we argue *a posteriori* instead of *a priori*. We have to start with the motions of the body as prior and better known to us, 413 a 11 *note*, because that which essentially and in the order of nature is prior, viz. the motion of soul, is unknown to us. Cf. Philop. 106, 18 ἐκ τῶν σαφεστέρων ποιεῖται τὴν διδασκαλίαν καὶ ἡμῖν γνωριμωτέρων, λέγω δὴ τοῦ σώματος.

406 b 1. τὸ δὲ σῶμα κινεῖται φορᾷ· ὥστε καὶ ἡ ψυχή. Bonitz (*Hermes* VII. pp. 421—8) thus sums up the argument of a 30—b 5: It is a fact (φαίνεται) that soul sets body in motion. For those who ascribe to soul self-motion, it is reasonable to assume that the soul produces those motions in the body to which it (the soul) is itself subject. Of the motions of body it is certain that they are motions in space. Hence the logical conclusion for the soul is ὥστε καὶ ἡ ψυχὴ...μεθισταμένη. What (asks Bonitz, l.c. p. 423) do these words mean? The two premisses are (1) The motions of soul are those of the body, (2) the motions of the body are motions in space. In (2) only φορά, a γένος κινήσεως, is posited, not the particular species (βάδισις, ἅλσις, πτῆσις. Cf. 406 a 9 *note*, and *Ind. Ar.* 132 a 44). There can, then, be no other conclusion than this: "Hence the motions of soul are motions in space" (es kann mithin nichts anderes erschlossen werden, als: folglich sind die Bewegungen der Seele räumliche Bewegungen). The result thus obtained seems absolutely incontrovertible. Bonitz goes on to enquire: Can the conclusion logically required be found in the words of the text? (Steht dies in dem vorliegenden Worten?) It seems to me that this is undoubtedly the case if we make a pause after ὥστε καὶ ἡ ψυχὴ [int. κινεῖται φορᾷ]. A. sometimes omits the predicate after ὥστε, *Ind. Ar.* 873 a 18 ὥστε sine verbo *Meteor.* IV. 10, 388 a 22 ὕλη τὸ ξηρὸν καὶ ὑγρόν, ὥστε ὕδωρ καὶ γῆ. A few examples may suffice: *Phys.* VIII. 6, 259 b 18 μεταβάλλει γὰρ τὸν τόπον τὸ σῶμα, ὥστε καὶ τὸ ἐν τῷ σώματι ὂν καὶ τὸ ἐν τῇ μοχλείᾳ κινοῦν ἑαυτό (sc. μεταβάλλει τὸν τόπον), *Pol.* 1252 b 20 πᾶσα γὰρ οἰκία βασιλεύεται ὑπὸ τοῦ πρεσβυτάτου, ὥστε καὶ αἱ ἀποικίαι διὰ τὴν συγγένειαν [int. βασιλευόνται], 1253 a 14 ὁ δὲ λόγος ἐπὶ τῷ δηλοῦν ἐστὶ τὸ συμφέρον καὶ τὸ βλαβερόν, ὥστε καὶ [sc. ἐπὶ τῷ δηλοῦν]

τὸ δίκαιον καὶ τὸ ἄδικον, *Eth. Nic.* 1133 a 20 πάντα γὰρ μετρεῖ, ὥστε καὶ τὴν ὑπεροχὴν καὶ τὴν ἔλλειψιν [int. μετρεῖ], πόσα ἄττα δὴ ὑποδήματ' ἴσον οἰκίᾳ ἢ τροφῇ, *Metaph.* 1039 a 33 ὥστε καὶ τὸ ζῷον [int. ἀνάγκη τόδε τι σημαίνειν κτέ.], 1055 a 22 ὅλως τε εἰ ἔστιν ἡ ἐναντιότης διαφορά, ἡ δὲ διαφορὰ δυοῖν, ὥστε καὶ ἡ τέλειος [sc. διαφορὰ δυοῖν], 1078 a 8 ὥστε καὶ ᾗ μήκη μόνον καὶ ᾗ ἐπίπεδα [int. ἴδια πάθη ἐστίν], 1078 a 11 ὥστε ἄνευ τε μεγέθους μᾶλλον ἢ μετὰ μεγέθους, καὶ μάλιστα ἄνευ κινήσεως [int. ἔχει τἀκριβές]. By a similar ellipse here also exactly the conclusion which the premisses warrant is left to be understood: ὥστε καὶ ἡ ψυχὴ [int. κινεῖται φορᾷ]. Cf. Them. 16, 16 H., 29, 15 Sp. τὸ δὲ σῶμα κινεῖται κατὰ τόπον, ὥστε καὶ ἡ ψυχὴ κατὰ τόπον ἤτοι γε ὅλη ἢ κατὰ μόρια μεθισταμένη. If so, μεταβάλλοι ἂν κατὰ τὸ σῶμα should not be emended but simply excised. It may be objected to the minor premiss that the body undergoes not only φορὰ but also ἀλλοίωσις and αὔξησις. The reply is that, as we have seen (see *note* on a 16 *supr.*), both ἀλλοίωσις and αὔξησις imply φορὰ and are at any rate ἐν τόπῳ.

b 2. μεταβάλλοι ἂν κατὰ τὸ σῶμα. Bonitz l.c., having clearly laid down that the conclusion of A.'s syllogism ought to contain a determination of the kind of change or motion which belongs to soul, viz. motion in space, examines the traditional text to see whether this determination is implied (1) in μεταβάλλοι, (2) in κατὰ τὸ σῶμα, (3) in μεθισταμένη. (1) Trend. explains "μεταβάλλοι ἄν, i.e. τόπον," but, if μεταβάλλειν of itself here meant "to move from place to place," as it unquestionably does in the passages cited, *Ind. Ar.* 458 b 50—54, then A. in his conclusion has expressed the general term, change or motion, and left the reader to supply for himself the particular kind of change or motion to be inferred from the premisses. This seems very improbable. Again, if (2) we look for what we want in κατὰ τὸ σῶμα we do indeed find it there, provided that the words are understood with Simpl. 37, 4 τουτέστι καθάπερ σῶμα τοπικῶς, and that this agreement between the motions of soul and body be construed generally, and not as an exact correspondence in every detail, such as is implied at b 15 sq., which would render impossible the further inference that the soul may leave the body and return to it. There is no objection on the score of language to interpreting μεταβάλλειν κατὰ τὸ σῶμα "to undergo the same species of change as the body." But the expression is almost incredibly clumsy, because then the conclusion would be an exact repetition of the major premiss, μεταβάλλει κατὰ τὸ σῶμα being identical with ἡ ψυχὴ καὶ αὐτὴ ταύτην τὴν κίνησιν κινεῖται ἣν τὸ σῶμα (a 32 sq.), while there is no inference from the minor at all, and in particular no technical term corresponding to φορά to indicate the kind of change or motion inferred for the soul. Can the missing complement to μεταβάλλοι ἂν be discovered (3) in μεθισταμένη? The verb is used *Ind. Ar.* 449 b 13 proprie de mutato loco. But Bonitz replies that the whole meaning of the words μεταβάλλοι ἄν... μεθισταμένη would form part of the conclusion from the premisses, whereas this whole meaning goes far beyond the premisses. Further, if κατὰ τὸ σῶμα is to be taken with μεθισταμένη, the further inference that soul can leave the body and return to it is again rendered impossible.

Thus failing to obtain from the text the conclusion logically required, Bonitz proposed to alter κατὰ τὸ σῶμα into κατὰ τόπον. In support of the emendation he urges that, in all places of his paraphrase which correspond to the words, Themistius has κατὰ τόπον: 16, 13 H., 29, 11 Sp. ἑπόμενον ἂν οὕτω καὶ εὔλογον εἴη καὶ τὸν τρόπον τῆς κινήσεως τὸν αὐτὸν αὐτήν τε κινεῖσθαι καὶ κινεῖν τὸ σῶμα· εἰ δὲ τοῦτο ἀκόλουθον, δηλονότι καὶ ἀντιστρέψασιν ἀληθές, ὡς κινεῖται τὸ σῶμα, οὕτω κινεῖσθαι καὶ τὴν ψυχήν. τὸ δὲ σῶμα κινεῖται **κατὰ τόπον**, ὥστε καὶ

ἡ ψυχὴ **κατὰ τόπον**, *ἤτοι γε ὅλη ἢ κατὰ μόρια μεθισταμένη* (cf. 16, 35 sq.: 16, 38 H., 30, 13: 30, 15 : 30, 18 Sp.) without ever indicating that these words are an explanatory inference from another expression. So, too, Philoponus, who twice refers to our passage, viz. 106, 19 *ἐπειδὴ γὰρ τὸ σῶμα, φησί, φορὰν κινεῖται, καὶ τὴν ψυχὴν ἀνάγκη φορὰν κινεῖσθαι*, 107, 20 *ὥστε καὶ αὐτὴ κινηθήσεται κατὰ τόπον ἢ ὅλη ἢ κατὰ μόρια μεθισταμένη ἴσως, ὅλη μὲν ὅλον κινοῦσα τὸ σῶμα, κατὰ μόρια δὲ μέρος αὐτοῦ κινοῦσα.* Neither Them. nor Philop. mentions *κατὰ τὸ σῶμα*, but the words are found in the text used by Simpl. (37, 4), whose explanation of them has been cited above. As I have already said, the end proposed by the emendation is as easily attained by excising *μεταβάλλοι ἂν κατὰ τὸ σῶμα* from the text as a clumsy marginal comment, by which some reader unfamiliar with A.'s ellipses supplied what seemed to him to be the missing conclusion. It will be observed that the words of Simplicius *τουτέστι καθάπερ σῶμα τοπικῶς* would be equally in point if his lemma stopped short at *ὥστε καὶ ἡ ψυχή*, while the explanation of Philop. (107, 20) favours an elliptical conclusion with *ὥστε* quite as much as does that of Them. (16, 16 H., 29, 15 sq. Sp.), both already cited. It would of course be possible to place a full stop after *ψυχή*, and by inserting *δ'* before *ἂν* to make a new sentence *μεταβάλλοι δ' ἂν...μεθισταμένη*. This new sentence would not be the conclusion of the syllogism, and so far some of the difficulties pointed out by Bonitz would disappear, but others would remain. If we must retain and may not emend *μεταβάλλοι ἂν κατὰ τὸ σῶμα*, I am inclined to accept Mr Shorey's suggestion (*A. J. Ph.* XXII. 153) that *κατὰ τὸ σῶμα* may be taken locally "within the body," and not in the sense given to the words by Simplicius (37, 4). Cf. *κατὰ πᾶν τὸ σῶμα* 408 a 16, where, however, motion is not implied. "This gives point," Mr Shorey urges, "to the following antithesis: (if it can move in the body) it would follow that it can also, *καί*, go forth from the body and return. The same thought seems to be implied in the comparison with the quicksilver," 406 b 18 sqq.

b 2. ἢ ὅλη ἢ κατὰ μόρια μεθισταμένη. When it has been proved that the soul is subject to spatial motion, *κινεῖται φορᾷ* or *κατὰ τόπον*, two alternatives present themselves. There are two species of spatial motion. Either the whole of a thing may change its place: this is motion of translation. Or the parts may move relatively to each other while the whole remains in the same place, e.g. when a sphere revolves or a top spins. Cf. *De Gen. et Corr.* I. 5, 320 a 19 *τὸ μὲν γὰρ φερόμενον ὅλον ἀλλάττει τόπον, τὸ δ' αὐξανόμενον ὥσπερ τὸ ἐλαυνόμενον· τούτου γὰρ μένοντος τὰ μόρια μεταβάλλει κατὰ τόπον, οὐχ ὥσπερ τὰ τῆς σφαίρας· τὰ μὲν γὰρ* [the parts of the revolving sphere] *ἐν τῷ ἴσῳ τόπῳ μεταβάλλει τοῦ ὅλου μένοντος, τὰ δὲ τοῦ αὐξανομένου ἀεὶ ἐπὶ πλείω τόπον* [sc. *μεταβάλλει*], Pl. *Laws* 893 C *τὰ τὴν τῶν ἑστώτων ἐν μέσῳ λαμβάνοντα δύναμιν λέγεις, φήσομεν, ἐν ἑνὶ κινεῖσθαι, καθάπερ ἡ τῶν ἑστάναι λεγομένων κύκλων στρέφεται περιφορά*, where the rotation of a sphere upon a fixed axis is illustrated by a simpler case, viz. the revolution of a circle about a fixed centre. Them. and Simpl. do not comment on these words: the inference is that they found no difficulty in them. Philoponus gives an erroneous interpretation (107, 21) *ὅλη μὲν ὅλον κινοῦσα τὸ σῶμα, κατὰ μόρια δὲ μέρος αὐτοῦ κινοῦσα*, possibly understanding *μεθισταμένη* in an active sense, at all events reading into the second clause *κατὰ μόρια μεθισταμένη* an alien idea derived from a forced interpretation of *ὅλη...μεθισταμένη*. Conrad Gesner gave approximately the right explanation: "*ἢ ὅλη*, ut si recta moveretur, *ἢ κατὰ μόρια*, ut si circulo," which Trend. deliberately rejected: "Minime; neque enim ad motus genus pertinet. Haec potius est sententia; Sequeretur animam vel omnem vel eius inter se facultates tanquam partes locum mutare." For this he is rightly

censured by Bonitz, l.c., p. 426, who remarks that to introduce the faculties of the soul at this point is quite inadmissible, since the inconsistencies which A. deduces from the theory under examination all relate to the nature of the soul itself conceived as existing and moving in space.

b 3 εἰ δὲ τοῦτ' ἐνδέχεται. In editione A videtur fuisse *εἰ δὲ τοῦτο, ἐνδέχοιτ' ἂν καὶ ἐξελθοῦσαν εἰσιέναι πάλιν.* Torstrik inferred this from the variants of the inferior MSS. (see *critical notes*), and it is actually found in y, of which he had not a collation. Bonitz (l.c.) argues that the reading of the inferior MSS. ought here to be preferred to E, because it is not a question of possibility: that the soul moves in space has been demonstrated as necessarily true. Even granting this, A. might make a compendiary use of *ἐνδέχεται*: "If this, as already demonstrated, is possible, a further possibility will follow, viz. etc." Torstrik himself regarded the variation here between what he calls the two editions as due merely to considerations of style: videtur autem correxisse, quia paulo ante usus erat formulâ eâ quae est *εἰ δὲ τοῦτο* a 32, an admission which goes a long way in the direction of those who see in the so-called *editio prior* of Book II. merely a paraphrase.

b 3 καὶ ἐξελθοῦσαν εἰσιέναι πάλιν ἐνδέχοιτ' ἄν, int. *τὴν ψυχήν.* This is intended by A. as a *reductio ad absurdum* of the supposition that the soul moves in space. Such absence from the body and return to it are common in the folklore and magic stories of all ages. Cf. Frazer, *Golden Bough*, ch. ii. § 2, "The nature of the soul," and ch. iv. § 3, "The external soul in folk-tales." Cf. also Vol. II., pp. 123—5 (1st ed.), on traces in folk-tales of belief in the resurrection of animals.

b 4 ἀνίστασθαι. Trend. compares *Il.* XXI. 55 *ἦ μάλα δὴ Τρῶες μεγαλήτορες, οὕσπερ ἔπεφνον, | αὖτις ἀναστήσονται ὑπὸ ζόφου ἠερόεντος.* His suggestion that the clause is the interpolation of a Christian scribe hardly merits serious consideration. That the dead should rise again is to Greek ideas the typical instance of an event antecedently incredible as reversing the established order of nature. Cf. Hdt. III. 62, cited by Bonitz *αὐτὸς...ἔθαψά μιν χερσὶ τῇσι ἐμεωυτοῦ. εἰ μέν νυν οἱ τεθνεῶτες ἀνεστᾶσι, προσδέκεό τοι καὶ Ἀστυάγεα τὸν Μῆδον ἐπαναστήσεσθαι· εἰ δ' ἔστι ὥσπερ πρὸ τοῦ, οὐ μή τί τοι ἔκ γε ἐκείνου νεώτερον ἀναβλαστῇ.*

b 5 τὴν δὲ κατὰ συμβεβηκὸς κίνησιν. This really goes back to 406 a 14 *εἰ δὲ κινεῖται μὴ κατὰ συμβεβηκός.* The supposition there brought forward has now been exhaustively treated. A. next turns to the alternative hypothesis and shows that, if the motion asserted of the soul be merely accidental (*κατὰ συμβεβηκός*, not *καθ' αὑτὸ* or *φύσει*), such motions may equally well be due to something other than the soul itself. Philop. 109, 15 *τὸ μὲν γὰρ κατὰ συμβεβηκὸς κινούμενον καὶ αὐτὸ ἑαυτῷ δύναιτο ἂν αἴτιον εἶναι τῆς τοιαύτης κινήσεως καὶ ὑπ' ἄλλου τὴν αὐτὴν ταύτην κινεῖσθαι.* A movement of the animal is occasioned by an impulse of its soul (*κατὰ ψυχικὴν ὁρμὴν κινουμένου τοῦ ζῴου*): in this case the soul of the animal is adventitiously moved, but by itself (*ὑφ' ἑαυτῆς κατὰ συμβεβηκὸς κινεῖται*). But suppose the animal to be impelled by external agency; in that case it is also adventitiously moved, but by something else. It is important to remember that A. is stating his own opinion in the sentence before us, supported by the evidence of facts. See the recapitulation, 408 a 30—34. The body is moved by something external (*ὑφ' ἑτέρου*) and the soul, through its inclusion in the body thus moved (406 a 5 *τῷ ἐν κινουμένῳ εἶναι*), is also moved, but indirectly, *per accidens*. The optatives with *ἂν* in b 6 *κινοῖτο ἄν, ὠσθείη ἂν* are purely potential.

b 6 κἂν ὑφ' ἑτέρου, by something else as well as by itself, in the way

described in 408 a 32 sq.: cf. 408 a 31 *κινεῖν ἑαυτήν* (*κατὰ συμβεβηκός*). Cf. on this point *Phys.* VIII. 6, 259 b 28 *οὐκ ἔστι δὲ τὸ αὐτὸ τὸ κινεῖσθαι κατὰ συμβεβηκὸς ὑφ' αὑτοῦ καὶ ὑφ' ἑτέρου· τὸ μὲν γὰρ ὑφ' ἑτέρου ὑπάρχει καὶ τῶν ἐν τῷ οὐρανῷ ἐνίαις ἀρχαῖς* (the spirits of the spheres), *ὅσα πλείους φέρεται φοράς, θάτερον δὲ τοῖς φθαρτοῖς μόνον*.

b 7 οὐ δεῖ δὲ...8 πλὴν εἰ μὴ κατὰ συμβεβηκός. "But that which has the attribute of self-motion as part of its very nature ought not, except accidentally, to be moved by something external." *Ind. Ar.* 604 a 28 *πλὴν εἰ μή*, pleonastice addita negatione *Anal. Prior.* I. 27, 43 a 39, Waitz ad loc. "*πλὴν εἰ μὴ* pleonasmus est, qui tamen ferri potest, quum *πλὴν* saepius non excipiendi vim habet, sed definiendi et limitandi." A. is still objecting to the proposition, "The soul is self-moved," although the ground is shifted from *καθ' αὑτὸ κινεῖσθαι* to *κατὰ συμβεβηκὸς κινεῖσθαι*. Cf. Philop. 109, 11 *βούλεται πρὸς τὸ αὐτοκίνητον ἐνστῆναι*. The ancient commentators were puzzled by the last clause, "except accidentally." What, we ask, is the exceptional case in which that which has the power of self-motion is also *per accidens* moved by something external? Philoponus thinks that the motion communicated by external force is never the same as that which the self-moving soul possesses in its own nature. But this is doubtful. Themistius and Simplicius agree in thinking that it is precisely the *concurrence* of the external impulse with the soul's self-motion which happens only incidentally.

b 8 ὥσπερ οὐδὲ...10 ἑτέρου ἕνεκεν. This sentence serves, by two instances, to show how much is meant by *ὑφ' ἑαυτοῦ κινεῖσθαι* as an essential attribute. The chiasmus should be noted: *τὸ καθ' αὑτὸ ἀγαθὸν* is opposed to (*τὸ*) *ἑτέρου ἕνεκεν*, that which is good in itself to that which is so only as a means to something else: while (*τὸ*) *δι' αὑτὸ* is opposed to (*τὸ*) *δι' ἄλλο*. In *Eth. Nic.* 1096 b 16 we read *καθ' αὑτὰ δὲ ποῖα θείη τις ἄν; ἢ ὅσα καὶ μονούμενα διώκεται, οἷον τὸ φρονεῖν καὶ ὁρᾶν καὶ ἡδοναί τινες καὶ τιμαί; ταῦτα γὰρ εἰ καὶ δι' ἄλλο τι διώκομεν, ὅμως τῶν καθ' αὑτὰ ἀγαθῶν θείη τις ἄν*. To meet the case of such goods we must suppose the qualification *εἰ μὴ κατὰ συμβεβηκός*, which stands in the main clause (406 b 8), to be repeated in the illustration.

b 10 τὴν δὲ ψυχὴν...11 εἴπερ κινεῖται. This statement becomes clearer as A.'s own theories of *αἴσθησις* and *ὄρεξις* are unfolded in the present treatise. As to the former, we may anticipate by a reference to 416 b 33 sq., 417 a 13, 17 sq., where *κινεῖσθαι, πάσχειν* and *ἀλλοίωσις* (a species of *κίνησις*), are used almost indifferently to describe the effect which the *αἰσθητὸν* produces upon the soul in actual perception. Subsequently 417 b 2 sqq. *ἐνεργεῖν* is preferred (*εἰς αὑτὸ γὰρ ἡ ἐπίδοσις καὶ εἰς ἐντελέχειαν* 417 b 6; cf. 425 b 26—426 a 8, 431 a 4—7), and on the whole *ποιεῖν, πάσχειν* are more in favour than *κινεῖν, κινεῖσθαι*. For *ὄρεξις* it is sufficient to refer to III., cc. 10, 11, e.g. 433 a 18—30, 433 b 11—18, 433 b 27—434 a 9. Occasionally even the rational soul is said to be "moved": e.g. 431 b 5 and possibly 433 a 24.

b 11 ἀλλὰ μὴν καὶ εἰ κινεῖ...15 αὐτῆς καθ' αὑτήν. Another objection. Motion is displacement, and therefore any motion of the soul would mean that the soul is displaced or dislodged from its nature, whence we are intended to infer that it would cease to be soul. So that the hypothesis of self-motion as belonging to the nature of soul is self-destructive. Alex. Aphr. discusses this expression, *ἀπ. καὶ λύσ.* II. 2. 46, 22—47, 27 (Bruns).

b 13. ἔκστασίς ἐστι τοῦ κινουμένου ᾗ κινεῖται. This definition is not to be found in the *Physics*, but it can be easily deduced from the more abstract form of the definition usually given, viz. "the realisation of what is potentially existent as such," or "the actualisation of what is undeveloped." This may be

made clear by considering one or two of the species of motion, e.g. under qualitative change (ἀλλοίωσις) a thing which was formerly white becomes black and then there is a displacement (ἔκστασις) of the quality "white." Again, take quantitative change: a tree grows to twice its former height, which has thus been displaced. Finally, and here the meaning of ἔκστασις is best seen, in the case of locomotion (φορά) from *A* to *B*, the "place" or spatial position of the thing which has moved is no longer *A* but *B*.

b 13. **ἐξίσταιτ' ἂν ἐκ τῆς οὐσίας.** The last three words are added because the soul is supposed to move by its very nature. The inference is obtained by pressing the analogy with the motion of material things regarded as displacement. Take the moving body of the previous note. When at *B* it is no longer at *A*, though this change of place leaves it in other respects unaffected: whereas ἀλλοίωσις destroys or modifies the former quality when it substitutes a new one, and αὔξησις alters the quantity of τὸ κινούμενον. Cf. *Phys.* VIII. 7, 261 a 20, where A. is arguing that φορὰ is less liable to this "displacement of essence" than the other modes of motion: ἥκιστα τῆς οὐσίας ἐξίσταται τὸ κινούμενον τῶν κινήσεων ἐν τῷ φέρεσθαι· κατὰ μόνην γὰρ οὐδὲν μεταβάλλει τοῦ εἶναι, ὥσπερ ἀλλοιουμένου μὲν τὸ ποιόν, αὐξανομένου δὲ καὶ φθίνοντος τὸ ποσόν. Similarly the soul, if self-motion is its essential nature, its logical essence, is, *quâ* moved, no longer after motion what it was before. It might even be said to have become παρὰ φύσιν. Cf. *De Cael.* I. 3, 286 a 18—20 ὕστερον δὲ τὸ παρὰ φύσιν τοῦ κατὰ φύσιν, καὶ ἔκστασίς τίς ἐστιν ἐν τῇ γενέσει τὸ παρὰ φύσιν τοῦ κατὰ φύσιν. Cf. Philop. 113, 14 καὶ ἡ ψυχὴ οὖν εἰ καθὸ ψυχή ἐστι καὶ κατ' οὐσίαν κινεῖται, ἐκσταίη ἂν τῆς οὐσίας ἑαυτῆς καὶ φθαρήσεται. Philop. appeals to Pl. *Phaedr.* 245 E. He justly remarks (114, 12) that A.'s contention is οὐκ αὐτὴ ἑαυτὴν κινεῖ, ἀλλ' ἔστιν ἐν αὐτῇ τὸ μὲν κινοῦν τὸ δὲ κινούμενον. Cf. 409 a 10—18.

b 15 **ἔνιοι δὲ...16 ὡς αὐτὴ κινεῖται.** This view attributes not merely spatial motion in general to the soul but movements corresponding exactly in detail to those of the body (406 a 31). It might have been held by any pre-Socratic philosopher who regarded the soul as a material thing enclosed in the body. The view implies (1) the soul is in the body, (2) the soul has definite spatial motions, (3) these it communicates to the body in which it resides. From Lucretius III. 370—3 it would appear that atoms of soul and atoms of body are, according to Democritus, arranged alternately in the animal, *singula privis adposita*.

b 17. **οἷον Δημόκριτος.** Cf. 409 a 32—b 4, Aet. IV. 3, 5 (*Doxogr. Gr.* 388) ὅπερ σῶμα εἶναι. **Φιλίππῳ.** *Frag. Com. Gr.* II. 172, fr. 22 Koch. Philippus was a son of Aristophanes, and a poet of the Middle Comedy. He wrote among other plays a *Daedalus*. Them. (19, 10 H., 34, 27 Sp.) says that Daedalus in this play claims to have made a moving Aphrodite: φησὶ γὰρ ὁ Δαίδαλος παρ' αὐτῷ κινουμένην ποιῆσαι τὴν ξυλίνην 'Αφροδίτην ἐγχέας ἄργυρον χυτόν. Cf. Meineke, *Frag. Com. Gr.* I. 340 sqq.; Philop. 114, 37.

b 20 **κινουμένας γάρ...22 τὸ σῶμα πᾶν.** Join διὰ τὸ πεφυκέναι μηδέποτε μένειν with κινουμένας. Cf. 404 a 11 sq. This quality of restless mobility is due ultimately to their shape, 405 a 8—13. The spherical atoms are here designated "indivisible spheres." Cf. 409 a 12 σφαιρίων, 409 b 9 σφαίρας μικράς. Being mobile themselves, they communicate motion to whatever they come in contact with, in this case the atoms of the body in which they are enclosed. Cf. generally 404 a 5—16, 409 a 31—b 11.

b 21. **συνεφέλκειν** = συγκινεῖν ἑαυταῖς. This explanation of the motion of the body reduces it to a species of push and leverage (Philop. 114, 29 τῷ κινεῖσθαι τὴν ψυχὴν κινεῖν τὸ σῶμα ὤσει καὶ μοχλείᾳ τινί), which, as Philop. observes, is equally involved in the argument adduced above (406 a 30—b 5).

b 22 ἡμεῖς δ' ἐρωτήσομεν...23 ταὐτὰ ταῦτα. The constant motion of the atoms of soul is put forward as the reason why the body moves: what then is the cause of its rest? Cf. *Phys.* VIII. 6, 258 b 23 δῆλον γὰρ ὡς αἴτιον τοῖς αὐτὰ ἑαυτὰ κινοῦσίν ἐστί τι τοῦ ὁτὲ μὲν εἶναι ὁτὲ δὲ μή.

b 24 ὅλως δ' οὐχ οὕτω...25 νοήσεως. A general argument, disposing of the whole theory that soul moves itself and the body thus mechanically by an appeal to the fact (φαίνεται) that man is acted upon by final causes. Cf. the sweeping argument *De Gen. et Corr.* II. 6, 334 a 10—15. We may paraphrase οὕτω "by impact and pressure," physical causes which imply contact. To this mode of causation A. opposes a species of purpose προαίρεσίς τις, which he subsumes under the general notion of thought (νόησις). Cf. 433 b 11 τοῦτο γὰρ [int. τὸ ὀρεκτόν] κινεῖ οὐ κινούμενον τῷ νοηθῆναι ἢ φαντασθῆναι. In the full discussion of προαίρεσις in *Eth. Nic.* III., c. 2 we are told, amongst other things (1112 a 15), ἡ προαίρεσις μετὰ λόγου καὶ διανοίας, and, as Trend. remarks, νόησις in the present passage must be taken in this wider and vaguer sense. It does not bear the special sense emphasised e.g. in 430 a 26, or of the passages in which νοῦς θεωρητικός is distinguished from νοῦς πρακτικός. Cf. III., c. 10, esp. 433 a 9—13, which shows, if proof were needed, that for irrational animals φαντασία ranks as νόησίς τις. Cf. also 429 a 4—9. Properly speaking, no irrational animal has προαίρεσις. *Eth. Nic.* 1111 b 8 sq. τοῦ μὲν γὰρ ἑκουσίου καὶ παῖδες καὶ τἆλλα ζῷα κοινωνεῖ, προαιρέσεως δ' οὔ, καὶ τὰ ἐξαίφνης ἑκούσια μὲν λέγομεν, κατὰ προαίρεσιν δ' οὔ. Alex. Aphr. neatly sums up *De An. Mantissa* (106, 11) ἡ δὲ ψυχὴ κινεῖ τῷ κατ' αὐτὴν ἡμᾶς νοεῖν τε καὶ προαιρεῖσθαι· τὸ μὲν οὖν ἀγαθὸν τῷ νοηθῆναι κινεῖ, ἡ δὲ ψυχὴ τῷ νοῆσαι.

b 26. ὁ Τίμαιος. The article denotes the principal speaker in the dialogue of Plato. The form of the reference can be paralleled elsewhere in A., e.g. *Pol.* 1342 a 32 ὁ ἐν τῇ Πολιτείᾳ Σωκράτης, 1261 b 19, 21, 1316 a 2 *et saepe*. Again *ib.* 1265 a 11 πάντες οἱ τοῦ Σωκράτους λόγοι, where by an odd lapse of memory A. includes the *Laws*, although Socrates is not mentioned as taking part in that Platonic dialogue. Similarly 1260 a 22—28 there seems to be a clear reference to the *Meno*, although the practice of Gorgias is merely reported in the dialogue, in which he takes no part. We may suppose that Plato in putting his views into the mouth of Timaeus, the Pythagorean philosopher of Locri in Italy, was in this case guided by the consideration that a physical discourse would have been unsuitable in the mouth of Socrates. Cf. Xen. *Memor.* I. 1, §§ 11—15; Pl. *Apol.* 19 B—D, 26 D sqq.; Ar. *Metaph.* 987 b 1 sq.

b 26 φυσιολογεῖ...27 τὸ σῶμα. A. uses φυσιολόγος in nearly the same sense as φυσικός. In treating of the history of philosophy he is fond of applying the name to the early Ionians, οἱ πρῶτοι φυσιολογήσαντες. *Metaph.* 986 b 14, 989 b 30, 992 b 4. The verb, elsewhere used absolutely, *Metaph.* 988 b 27 φυσιολογεῖν περὶ πάντων, is here constructed with accusative and infinitive, "gives a physicist's account of the matter to the effect that the soul sets the body in motion."

b 27 τῷ γὰρ κινεῖσθαι αὐτὴν...407 a 2 κινήσεις. Here follows an abstract of the famous passage, known even in antiquity as the Ψυχογονία of the *Timaeus* (34 B sqq.). The narrative is obviously mythical in form and, partly for this reason, has been the occasion of much controversy in all ages. The divergent opinions of the ancients may be gathered from Plutarch's tract *De Animae Procreatione in Timaeo Platonis* as well as from the commentaries of Proclus and Chalcidius on the *Timaeus*. A. in the present passage appears to treat the account as literal statement of fact, and bases his objections upon this interpretation as if there were no other; although, as we learn from Plutarch,

contemporary Platonists maintained that the story of creation was not to be taken literally.

b 27. καὶ τὸ σῶμα κινεῖν διὰ τὸ συμπεπλέχθαι πρὸς αὐτό. Cf. Pl. *Tim.* 34 B and 36 E sqq. The soul is moved (b 27) of itself (*κινεῖσθαι αὐτήν*): this motion it communicates to the body, (34 A) *κίνησιν γὰρ ἀπένειμεν αὐτῷ* [sc. *τῷ κόσμῳ*] *τὴν τοῦ σώματος οἰκείαν, τῶν ἑπτὰ τὴν περὶ νοῦν καὶ φρόνησιν μάλιστα οὖσαν* [i.e. circular motion or revolution, *περίοδος*]: this is because soul is interwoven with body (*συμπέπλεκται*): *Tim.* 36 E *ἡ δ' ἐκ μέσου πρὸς τὸν ἔσχατον οὐρανὸν πάντῃ διαπλακεῖσα κύκλῳ τε αὐτὸν ἔξωθεν περικαλύψασα.* The soul and body are the soul and body of the universe (*κόσμος = οὐρανός = τὸ πᾶν.* Cf. 406 b 30, 407 a 3) which is a living creature (*Tim.* 30 B) comprehending in itself all particular living creatures with souls and bodies (*Tim.* 30 C—31 B).

b 28. συνεστηκυῖαν γὰρ ἐκ τῶν στοιχείων. Cf. 404 b 17. In *Tim.* 35 A these constituents of soul are designated *ταὐτό, θάτερον* and *οὐσία*, the last being itself a compound of the two former. Cf. 36 C, 37 A, B. These *στοιχεῖα* may have had other names in other expositions of Plato's doctrine, e.g. One, Other, or, with the greater importance assumed by the idea-numbers, One, Two. Even in the *Timaeus* the soul can hardly be described as simple or uncompounded.

b 29. μεμερισμένην. The division of the soul is fully described in *Tim.* 35 B—36 B: the "harmonic numbers" being those which determine the great musical scale of three octaves. Cf. 37 A *ἀνὰ λόγον μερισθεῖσα.*

b 29. ὅπως αἴσθησίν τε σύμφυτον ἁρμονίας ἔχῃ. This purpose seems sufficiently indicated by *Tim.* 37 A, B: but the words *αἴσθησιν ξύμφυτον* actually first occur in 42 A, where they are used of the particular soul.

b 30. καὶ τὸ πᾶν φέρηται συμφώνους φοράς. In the *Timaeus* the universe is introduced as moving with uniform revolution, 34 A. When the constitution of the soul has been described, we hear of two revolutions in opposite directions, viz. in the circle of the Same and in the circle of the Other. The latter consists of seven circles, the orbits of the planets, including under the term sun and moon. All these revolutions are determined by ratio and harmony *κύκλους...ἐν λόγῳ φερομένους* 36 D. They are *σύμφωνοι* because the circle of the Same controls the circle of the Other: 36 C *κράτος ἔδωκε τῇ ταὐτοῦ καὶ ὁμοίου περιφορᾷ.* The adjustment of the velocities of the planetary orbits is explained 39 B.

b 31 τὴν εὐθυωρίαν...407 a 1 κύκλους. A. has condensed the Platonic account: the most relevant passage is *Tim.* 36 B *ταύτην οὖν τὴν ξύστασιν πᾶσαν διπλῆν κατὰ μῆκος σχίσας μέσην πρὸς μέσην ἑκατέραν ἀλλήλαις οἷον χῖ προσβαλὼν κατέκαμψεν, εἰς ἓν κύκλῳ ξυνάψας αὐταῖς τε καὶ ἀλλήλαις ἐν τῷ καταντικρὺ τῆς προσβολῆς, καὶ τῇ κατὰ ταὐτὰ καὶ ἐν ταὐτῷ περιαγομένῃ κινήσει πέριξ αὐτὰς ἔλαβε, καὶ τὸν μὲν ἔξω, τὸν δ' ἐντὸς ἐποιεῖτο τῶν κύκλων...*36 D *τὴν δ' ἐντὸς* [sc. *φορὰν*] *σχίσας ἑξαχῇ ἑπτὰ κύκλους ἀνίσους...κατὰ τἀναντία μὲν ἀλλήλοις προσέταξεν ἰέναι τοὺς κύκλους.*

b 31. τὴν εὐθυωρίαν. The preceding participles agree grammatically with this word, which obviously refers to the soul, the soul of the universe. The same thought might have been expressed by saying that "he bent it" (the soul) "from a straight line (*ἐξ εὐθυωρίας*) into a circle." As it stands the word, which properly means "straight course" or "direction," must be understood of a "straight piece" or "riband" of soul. In Plato it is the mixture (*ξύστασις*) constituting soul which is slit or bent. **εἰς κύκλον κατέκαμψεν** = *κατέκαμψεν, εἰς ἓν κύκλῳ ξυνάψας* in Pl. *Tim.* 36 B cited above. In Plato the splitting occurs first, the bending afterwards.

b 32. καὶ διελὼν...συνημμένους. Plato says (*loc. cit.*) that the Creator, having cleft the soul lengthwise in twain, laid the two halves across in the shape of X,

bent them round and joined them again at a point opposite to that of their original contact (i.e. the centre of X).

407 a 1. τὸν ἕνα. By this is meant Plato's circle of the Other, comprehending the orbits of the sun, moon and the five planets known to the ancients (*Timaeus* 36 D cited above). **ὡς οὔσας τὰς τοῦ οὐρανοῦ φορὰς τὰς τῆς ψυχῆς κινήσεις.** The construction is accus. abs. In this identical proposition A. probably meant φοράς to be subject. Them. (20, 14 H., 36, 28 Sp.) paraphrases the assumption contained in this clause as follows: *καὶ διὰ τοῦτο κύκλῳ κινεῖσθαι τὸν οὐρανόν, ὅτι κύκλος ἦν ἡ ψυχή*, that is, the soul of the universe is a circle and therefore the universe itself revolves in a circle. There is apparently no explicit statement of the kind in the dialogue, but as the universe is declared in the strongest terms to be a ζῷον and to be intelligent in virtue of its intellect, which is in soul as soul is in body (30 B), it would seem to be implied that, as in the case of other ζῷα, the movements of the universe are due to its soul, in fact *are* the movements of the soul of the universe. Soul governs body, we are told (34 C), and the circular motion first attributed to the universe as a whole (viz. τὴν τοῦ σώματος οἰκείαν 34 A) is repeatedly attributed to its soul (36 C, E, 37 A).

407 a 2—b 26. Here follow eight objections based upon the details of the account in the *Timaeus* literally interpreted. (1) Soul is not a magnitude (407 a 2—10). (2) If it were, it would be impossible to explain the process of thought (407 a 10—22). (3) Thought would be infinite if eternal, whereas all processes of thought are finite (407 a 22—31). (4) Thought would be a recurring cycle (407 a 31—32). (5) As a fact thought implies rest rather than motion (407 a 32—b 2). (6) The inextricable implication of soul with body is a defect of the theory (407 b 2—5). (7) No teleological explanation is furnished of the motion of the universe (407 b 5—11). Finally (8) this theory shares with others the disadvantage that it fails to account for the dependence of a particular soul upon a particular body (407 b 12—26).

407 a 2. οὐ καλῶς. Int. ἔχει.

a 3. τὸ λέγειν τὴν ψυχὴν μέγεθος εἶναι. Cf. 407 a 16 *τί δεῖ μέγεθος ἔχειν;* A.'s own view, that νοῦς is ἀμερής and therefore οὐδὲν ἔχων μέγεθος (cf. *Phys.* VIII. 10, 266 a 10) comes out clearly in the course of the argument. On μέγεθος see *Ind. Ar.* s.v. 448 b 35. It is either (1) the abstract of μέγας, magnitude, size, extension, i.e. ποσότης (cf. 418 a 18), or (2) something concrete, ποσόν τι, συνεχές, διαιρετόν. Thus the term is used sometimes for γραμμή, sometimes for ἐπίπεδον. Sed plerumque τὸ μέγεθος ubi ad unam potissimum speciem refertur τὸ σῶμα significat, e.g. the atoms of Democritus are ἀδιαίρετα μεγέθη. Cf. 432 a 4 τὰ μεγέθη τὰ αἰσθητά. Lines, surfaces and solids are the three kinds of μέγεθος: see *note* on 423 a 22. The objection implies that the soul is a mathematical object, but not necessarily that it is material or corporeal. This consideration has its full force whether we interpret the account in the *Timaeus* literally, or treat it as a myth. A circle (or a pair of circles meeting in two points) would be μέγεθος ὡς γραμμή. We must further remember that Plato and Aristotle differ fundamentally as to the nature and mode of existence of mathematical objects, lines, surfaces and solids. To the former they are objective realities and more real than the things of sense: to A. they are indeed ὄντα, but οὐχ ἁπλῶς ὄντα, being obtained by abstraction from things of sense, by whose existence their very existence is conditioned, λόγῳ πρότερα but τῇ οὐσίᾳ ὕστερα.

a 3. τὴν γὰρ τοῦ παντός, int. ψυχήν. The argument is as follows. By soul Plato must mean thinking soul or νοῦς, and not soul as possessed of perception, anger or desire, the movement of which is not circular. But the unity or continuity of

thinking mind, like that of thought, is comparable to that of numerable quantity, not to that of extended or measurable quantity : in other words is a unity of succession (*τῷ ἐφεξῆς ἕν*), not a unity of co-existence. In *Metaph.* 1020 a 8 quantity is divided into *ποσὸν ἀριθμητόν = πλῆθος* and *ποσὸν μετρητόν = μέγεθος* : the former being discrete, the latter continuous.

a 4. δῆλον ὅτι...ὁ καλούμενος νοῦς. The subject of *βούλεται* is *ὁ Τίμαιος*. A.'s characteristic caution appears in *τοιαύτην οἷον* and *ὁ καλούμενος νοῦς*. Cf. 429 a 22, 432 b 26 with *notes*: and for a similar sense of *καλούμενος* 420 b 28, 423 b 30, 433 a 31.

a 5. οὐ γὰρ δὴ...ἡ ἐπιθυμητική. In the *Timaeus* these faculties are introduced later, with the creation of particular souls, *Tim.* 42 A. Cf. Them. 20, 23—6 H., 37, 11—16 Sp. In fact, Plato identifies the true nature of soul with reason so fully that he adds an explanation of sensation and emotion almost on the assumption that they are, so to say, disorders of the reason, the processes of pure reason working irregularly under novel conditions (*Tim.* 43 E sqq. Cf. *Phaedo* 65 E—66 E), the processes of particular, not universal, soul.

a 6. οὐ κυκλοφορία. Cf. *Tim.* 43 C—44 C. Them. 20, 25 H., 37, 14 Sp. *καὶ γὰρ ἡ αἴσθησις ὥσπερ κατ' εὐθεῖαν ἐπὶ τὰ ἔξω καὶ παραπλησίως ἡ ὄρεξις.* Philop. 125. 1 *εὐθεῖαι γὰρ τινές εἰσιν* [sc. *ἡ αἰσθητικὴ ἢ* (leg. *καὶ*) *ἡ θυμοειδὴς ἢ ἡ ἐπιθυμητική*]. *αἵ τε γὰρ ὄψεις ἀπὸ τῶν ὀφθαλμῶν κατ' εὐθεῖαν ἐκπέμπονται καὶ πάλιν ἐν ταῖς ἀνακλάσεσι παλινδρομοῦσαι κατὰ τὴν αὐτὴν εὐθεῖαν ἐπανακάμπτουσι* (which agrees with *Tim.* 45 C), *θυμὸς δὲ καὶ ἐπιθυμία πρόοδοι τινές εἰσιν εὐθείας μιμούμεναι.*

a 6. ὁ δὲ νοῦς εἷς καὶ συνεχὴς ὥσπερ καὶ ἡ νόησις. Having thus established that the soul of the universe is *νοῦς* alone to the exclusion of other faculties, A. proceeds with his usual method (cf. I., c. 3 ad init.) to deduce from the proposition he is attacking conclusions which contradict it. According to his own physical theory, every magnitude is continuous (*Phys.* IV. 11, 219 a 11 *πᾶν μέγεθος συνεχές*, VI. 2, 233 a 11 *μέγεθος ἅπαν ἐστὶ συνεχές*) and potentially capable of subdivision into magnitudes which are continuous, *Metaph.* 1020 a 10 *λέγεται δὲ πλῆθος μὲν τὸ διαιρετὸν δυνάμει εἰς μὴ συνεχῆ, μέγεθος δὲ τὸ εἰς συνεχῆ* : its unity is due to this continuity. Herein it differs from discrete quantity or number, which derives such continuity as it has from succession. Philop. (126, 3) makes A. say : 'So far from allowing *νοῦς* to be continuous, I should with better reason affirm it to be discontinuous (*διωρισμένος*). If it could be said to be continuous at all, it will be so in the same sense as discrete quantity or number, since the different numbers follow in a definite order of succession which allows nothing else to come between them.' The proof for *νοῦς* anticipates the doctrine of III., cc. 4—8. *Νοῦς* is taken to be *ὁ κατ' ἐνέργειαν* in contradistinction to potential *νοῦς*: Philop. 126, 21 *ἐνέργεια δὲ τοῦ νοῦ ἡ νόησις, ἡ δὲ νόησις οὐδὲν ἄλλο ἐστιν ἢ τὰ νοήματα, ὥσπερ καὶ ἡ κατ' ἐνέργειαν αἴσθησις τὰ αἰσθήματα.* To the same effect Them. 20, 27 H., 37, 18 Sp. *μέγεθος μὲν γὰρ ἅπαν συνεχές, καὶ οὕτως ἐν τῷ συνεχὲς εἶναι καὶ τῷ συνάπτειν αὐτοῦ πρός τινα κοινὸν ὅρον τὰ μόρια· ὁ δὲ νοῦς εἷς καὶ συνεχὴς κατ' ἄλλον τρόπον, εἰ δεῖ τὸ συνεχὲς ὅλως ἐπ' αὐτοῦ λέγειν.* The identity of *νοῦς* in actuality with *νόησις* follows from the statement (429 a 24, b 31) that *νοῦς* is nothing in actuality prior to thinking.

a 7. ἡ δὲ νόησις τὰ νοήματα. The process of actual thinking, the *ἐνέργεια* of *νοῦς*, finds expression in *νοήματα*, each of which is a single notion or conception, either as the thought of something indivisible or as the unity of two indivisibles in a judgment, whether affirmative or negative. This is further developed and explained in III., c. 6. Cf. III. 8, 432 a 8—14.

a 8. ταῦτα δὲ...ὡς τὸ μέγεθος. The Greek commentators dwell more particularly on ratiocination : e.g. Them. 20, 34 H., 37, 27 Sp. *ὅταν γὰρ τόδε μετὰ τόδε*

νοῶμεν, διωρισμένα μὲν τὰ νοήματα, τὸ δὲ ἐφεξῆς ἀλλήλοις ἔχει, καὶ τελευτᾷ εἰς ἓν πολλάκις τὰ πλείω, ὥσπερ ἐν τοῖς συλλογισμοῖς τὰ λήμματα εἰς τὸ συμπέρασμα, ἀλλ' οὐ τῷ συνεχῆ εἶναι, οὐδὲ τῷ πρὸς ὅρον κοινὸν συνάπτειν. To the same effect Philop. 126, 24—29 and Simpl. 42, 13—33. The train of thoughts passes from one discrete item to another; what continuity it has is due to the succession. M. Rodier seeks to show that the same holds with single notions: the parts of the definition are subordinate, not coordinate; hence the suppression of one may involve the suppression of the others but not *vice versa*, which also has a parallel in the numerical series. In support of this he cites *Metaph.* 1035 b 4—7, *Categ.* 13, 15 a 4 sq., 12, 14 a 31 sq. On the relative priority of One in the numerical series see also *Metaph.* 1084 b 13—16. Trend. 209 Νοήματα, i.e. quae mens excogitavit, unum sunt, quoniam partes lege quadam sese excipiunt (τῷ ἐφεξῆς), nulla tam spatii continuitate cohaerentes; sunt igitur, quemadmodum numerus, cuius partes nec extra se positae neque externo vinculo connexae, sed sola cogitationis vi ad unitatem quandam redactae. Itaque mens aut partium ignara est aut certe non tanquam magnitudo continua. Continuity (and therefore Unity) of succession is a kind of bastard unity, κατὰ τὴν ἀναλογίαν συνεχές as Philop. 127, 2 calls it. The problem thus raised involves the question, Does mind always think? on which see 430 a 5 sq., 430 a 22.

a 9 διόπερ...10 ὡς μέγεθός τι συνεχής. The first opinion, as will appear from 430 b 15, is A.'s own. This is the negation of μέγεθος ἔχειν *Metaph.* 1073 a 5 δέδεικται δὲ καὶ ὅτι μέγεθος οὐδὲν ἔχειν ἐνδέχεται ταύτην τὴν οὐσίαν [viz. ἀΐδιος οὐσία which is the prime movent and the Deity], ἀλλ' ἀμερὴς καὶ ἀδιαίρετός ἐστιν. If νοῦς be ἀμερής, by another of A.'s physical principles, it is incapable of motion, *Phys.* VIII. 10. 240 b 30 οὐκ ἐνδέχεται τὸ ἀμερὲς κινεῖσθαι οὐδ' ὅλως μεταβάλλειν.

a 10 πῶς γὰρ δὴ...22 [νόησις]. A new objection. How will Mind think, if it be extended? The context shows that what A. means is: "Granting that the movement (κίνησις) of mind is thought, and the movement of a circle revolution, what analogy is there between the two to justify Plato in using the one to represent the other?" Themistius (21, 4 H., 38, 10 Sp.) in his paraphrase supplies a necessary premiss: "How will Mind think, especially if soul and mind need contact or contiguity with the object of thought?" εἰ...ἀφῆς χρεία τῇ ψυχῇ καὶ τῷ νῷ καὶ πελάσεως πρὸς τὸ νοούμενον. Hence θιγὼν had better be supplied with ὁτῳοῦν μορίῳ (407 a 11) and *ib.* κατὰ μέγεθος. The evidence for πότερον is the unsupported first hand of E, except that vet. transl. and Soph. (21, 7; 22, 23) point to πότερον καθ' ὅλον ἢ which Torstrik accepted, inserting θιγὼν in the text before ἤ. I prefer to understand θιγὼν rather than to insert it. Three alternative hypotheses present themselves; or rather two, one of which is subdivided; that is to say (1) that soul thinks by means of its parts severally, whether these parts be (*a*) magnitudes or (*b*) points, a 11—17, or (2) that soul as a whole apprehends its object as a whole, a 17 sq. Difficulties confront us on either hypothesis. Taking (1 *b*) first, point after point of the circle as it revolves comes into contact with the object, and as there is an infinity of such points, it will take an infinite time for mind to apprehend its object. On the other hand, on assumption (1 *a*) if an extended part (μέγεθος) of the circle comes in contact with the object, the process of thinking will involve a constant repetition in which the same object is thought again and again: which is contrary to experience. Again, if contact by means of a single part is sufficient, the supposed revolutions of the circle and the circle itself as merely extended become superfluous. On hypothesis (2) i.e. if the whole circle is required in order to apprehend anything in thought, what part is played by the point by point contact? There is a further difficulty on either hypothesis, viz. that the procedure is the same whether the object of

thought be divisible or indivisible. On hypothesis (1) how can what is indivisible be apprehended by what is divisible? On hypothesis (2) how can what is divisible be apprehended by what is indivisible?

a 12. εἰ δεῖ καὶ τοῦτο μόριον εἰπεῖν. Τοῦτο = τὴν στιγμήν: attracted to the gender of *μόριον*. This assumption A. would not himself concede: *Phys.* VI. 6, 237 b 7 *αἴτιον δὲ τούτου τὸ μὴ εἶναι ἀμερὲς ἀμεροῦς ἐχόμενον*, *De Gen. et Corr.* I. 2, 317 a 10 sq. *οὐ γάρ ἐστιν ἐχόμενον σημεῖον σημείου ἢ στιγμὴ στιγμῆς*, *De Cael.* II. 13. 296 a 16 *οὐθὲν γὰρ στιγμὴ τῶν σωμάτων ἐστίν.* According to A. the line is potentially, not actually, divisible into points: the point or "unit having position" is not the constituent element out of which even the line is compounded (*σύγκειται*, *Phys.* IV. 8, 215 b 19), much less is it any real part of bodies. In every line there are an infinite number of points *δυνάμει μέν, ἐντελεχείᾳ δ' οὔ.* **εἰ μὲν οὖν κατὰ στιγμήν.** Supply *θιγὼν νοήσει* (or *θίξεται*) as above, and similarly below (a 14) with *εἰ δὲ κατὰ μέγεθος.*

a 14. πολλάκις...νοήσει τὸ αὐτό. This follows from A.'s doctrine that extended magnitude is divisible into a finite or infinite number of parts, each itself a magnitude. The contact with successive parts, which *ex hypothesi* is thinking, will not be a single instantaneous act, the cogitant subject will travel over the parts of the extended object, and this will take time. If the extended object is infinitely divisible, it may take infinite time over thinking that one thing. Cf. Simpl. 43, 31 *διαιρεῖν γὰρ ἀνάγκη, ἐπειδὴ καὶ μέγεθος καὶ κινούμενον ὑπόκειται νοεῖν. τί οὖν ἄτοπον; ὅτι πολλάκις ἢ ἀπειράκις νοήσει τὸ αὐτό. πολλάκις μέν, εἰ ὡρισμένα τὰ μεγέθη, εἰς ἃ ἡ διαίρεσις εἴη, ἀπειράκις δέ, εἰ ἀόριστα, τῷ ἀεὶ τὸ δεύτερον τοῦ πρὸ ἑαυτοῦ ἥμισυ φέρε ἢ τρίτον λαμβάνεσθαι. ἀνάγκη οὖν, εἰ μέλλοι τῷ ὅλῳ ἡ τοῦ προκειμένου γνῶσις ἐγγίνεσθαι, πολλάκις ἢ ἀπειράκις, καὶ διὰ τὸ μηδέποτε διεξιέναι ἀδύνατον· τὸ δὲ πολλάκις καὶ αὐτὸ ἄτοπον.*

a 15. ἐνδεχόμενον, int. *νοῆσαι*, in a single instantaneous act of thought, according to A., *ἅμα νοεῖ καὶ νενόηκε.*

a 18. τίς ἐστιν ἡ τοῖς μορίοις θίξις; What does the contact with the parts mean? What is its rôle, its raison d'être? For other instances of a criticism conveyed by interrogation cf. *De Sensu* 2, 437 b 15 *τίς γὰρ ἀπόσβεσις φωτός ἐστιν;* 438 a 29 *τό τε γὰρ συμφύεσθαι τί ἐστι φωτὶ πρὸς φῶς;* *Metaph.* 991 a 22. The interrogation implies that little or nothing can be made of the explanation provided. The *ἀπορία* of *Metaph.* 1075 a 5—7 is not quite the same.

a 19 ἀναγκαῖον...22 περιφορὰ [νόησις]. A. is aware that his objection may be met by drawing a distinction between the soul and the circle in the *Timaeus*. It might be said that the circle is the matter or the necessary condition and instrument of the soul. The argument is put clearly and succinctly by Simplicius, "How, then, does he infer that mind is this circle? By arguing from the following premiss: Things which have their operations identical also have identical natures or essences," Simpl. 46, 11 *ὧν αἱ ἐνέργειαι αἱ αὐταί, τούτων καὶ αἱ οὐσίαι.* The operation of *νοῦς* is *νόησις*, the operation of the circle is its revolution. Now the revolution of the circle *is* declared to be thinking (*νόησις*), and, things whose operation is one and the same being themselves one and the same, mind and the circle are identical. A. proceeds (a 21 *εἰ οὖν ἡ νόησις περιφορά*), "If then we equate the revolution of the circle with thinking": the implication being that we are justified by the *Timaeus* in doing so. Cf. *Tim.* 37 A—C *αὐτή τε ἀνακυκλουμένη πρὸς αὐτήν...λέγει κινουμένη διὰ πάσης ἑαυτῆς κτέ.*, and this declaration of soul (*λόγος*) consists of true beliefs, true opinions, knowledge and reason (*νοῦς*). Cf. 36 E *αὐτὴ ἐν αὑτῇ στρεφομένη, θείαν ἀρχὴν ἤρξατο ἀπαύστου καὶ ἔμφρονος βίου*, 47 B *ἵνα τὰς ἐν οὐρανῷ τοῦ νοῦ κατιδόντες περιόδους χρησαίμεθα ἐπὶ τὰς περιφορὰς τὰς τῆς παρ' ἡμῖν διανοήσεως, ξυγγενεῖς ἐκείναις οὔσας.*

described in 408 a 32 sq.: cf. 408 a 31 κινεῖν ἑαυτήν (κατὰ συμβεβηκός). Cf. on this point *Phys.* VIII. 6. 259 b 28 οὐκ ἔστι δὲ τὸ αὐτὸ τὸ κινεῖσθαι κατὰ συμβεβηκὸς ὑφ' αὑτοῦ καὶ ὑφ' ἑτέρου· τὸ μὲν γὰρ ὑφ' ἑτέρου ὑπάρχει καὶ τῶν ἐν τῷ οὐρανῷ ἐνίαις ἀρχαῖς (the spirits of the spheres), ὅσα πλείους φέρεται φοράς, θάτερον δὲ τοῖς φθαρτοῖς μόνον.

b 7 οὐ δεῖ δὲ...8 πλὴν εἰ μὴ κατὰ συμβεβηκός. "But that which has the attribute of self-motion as part of its very nature ought not, except accidentally, to be moved by something external." *Ind. Ar.* 604 a 28 πλὴν εἰ μή, pleonastice addita negatione *Anal. Prior.* I. 27. 43 a 39, Waitz ad loc. "πλὴν εἰ μή pleonasmus est, qui tamen ferri potest, quum πλὴν saepius non excipiendi vim habet, sed definiendi et limitandi." A. is still objecting to the proposition, "The soul is self-moved," although the ground is shifted from καθ' αὑτὸ κινεῖσθαι to κατὰ συμβεβηκὸς κινεῖσθαι. Cf. Philop. 109, 11 βούλεται πρὸς τὸ αὐτοκίνητον ἐνστῆναι. The ancient commentators were puzzled by the last clause, "except accidentally." What, we ask, is the exceptional case in which that which has the power of self-motion is also *per accidens* moved by something external? Philoponus thinks that the motion communicated by external force is never the same as that which the self-moving soul possesses in its own nature. But this is doubtful. Themistius and Simplicius agree in thinking that it is precisely the *concurrence* of the external impulse with the soul's self-motion which happens only incidentally.

b 8 ὥσπερ οὐδὲ...10 ἑτέρου ἕνεκεν. This sentence serves, by two instances, to show how much is meant by ὑφ' ἑαυτοῦ κινεῖσθαι as an essential attribute. The chiasmus should be noted: τὸ καθ' αὑτὸ ἀγαθὸν is opposed to (τὸ) ἑτέρου ἕνεκεν, that which is good in itself to that which is so only as a means to something else: while (τὸ) δι' αὑτὸ is opposed to (τὸ) δι' ἄλλο. In *Eth. Nic.* 1096 b 16 we read καθ' αὑτὰ δὲ ποῖα θείη τις ἄν; ἢ ὅσα καὶ μονούμενα διώκεται, οἷον τὸ φρονεῖν καὶ ὁρᾶν καὶ ἡδοναί τινες καὶ τιμαί; ταῦτα γὰρ εἰ καὶ δι' ἄλλο τι διώκομεν, ὅμως τῶν καθ' αὑτὰ ἀγαθῶν θείη τις ἄν. To meet the case of such goods we must suppose the qualification εἰ μὴ κατὰ συμβεβηκός, which stands in the main clause (406 b 8), to be repeated in the illustration.

b 10 τὴν δὲ ψυχὴν...11 εἴπερ κινεῖται. This statement becomes clearer as A.'s own theories of αἴσθησις and ὄρεξις are unfolded in the present treatise. As to the former, we may anticipate by a reference to 416 b 33 sq., 417 a 13, 17 sq., where κινεῖσθαι, πάσχειν and ἀλλοίωσις (a species of κίνησις), are used almost indifferently to describe the effect which the αἰσθητὸν produces upon the soul in actual perception. Subsequently 417 b 2 sqq. ἐνεργεῖν is preferred (εἰς αὑτὸ γὰρ ἡ ἐπίδοσις καὶ εἰς ἐντελέχειαν 417 b 6; cf. 425 b 26—426 a 8, 431 a 4—7), and on the whole ποιεῖν, πάσχειν are more in favour than κινεῖν, κινεῖσθαι. For ὄρεξις it is sufficient to refer to III., cc. 10, 11, e.g. 433 a 18—30, 433 b 11—18, 433 b 27—434 a 9. Occasionally even the rational soul is said to be "moved": e.g. 431 b 5 and possibly 433 a 24.

b 11 ἀλλὰ μὴν καὶ εἰ κινεῖ...15 αὐτῆς καθ' αὑτήν. Another objection. Motion is displacement, and therefore any motion of the soul would mean that the soul is displaced or dislodged from its nature, whence we are intended to infer that it would cease to be soul. So that the hypothesis of self-motion as belonging to the nature of soul is self-destructive. Alex. Aphr. discusses this expression, ἀπ. καὶ λύσ. II. 2. 46, 22—47, 27 (Bruns).

b 13. ἔκστασίς ἐστι τοῦ κινουμένου ᾗ κινεῖται. This definition is not to be found in the *Physics*, but it can be easily deduced from the more abstract form of the definition usually given, viz. "the realisation of what is potentially existent as such," or "the actualisation of what is undeveloped." This may be

made clear by considering one or two of the species of motion, e.g. under qualitative change (ἀλλοίωσις) a thing which was formerly white becomes black and then there is a displacement (ἔκστασις) of the quality "white." Again, take quantitative change: a tree grows to twice its former height, which has thus been displaced. Finally, and here the meaning of ἔκστασις is best seen, in the case of locomotion (φορά) from *A* to *B*, the "place" or spatial position of the thing which has moved is no longer *A* but *B*.

b 13. ἐξίσταιτ' ἂν ἐκ τῆς οὐσίας. The last three words are added because the soul is supposed to move by its very nature. The inference is obtained by pressing the analogy with the motion of material things regarded as displacement. Take the moving body of the previous note. When at *B* it is no longer at *A*, though this change of place leaves it in other respects unaffected: whereas ἀλλοίωσις destroys or modifies the former quality when it substitutes a new one, and αὔξησις alters the quantity of τὸ κινούμενον. Cf. *Phys.* VIII. 7, 261 a 20, where A. is arguing that φορὰ is less liable to this "displacement of essence" than the other modes of motion: ἥκιστα τῆς οὐσίας ἐξίσταται τὸ κινούμενον τῶν κινήσεων ἐν τῷ φέρεσθαι· κατὰ μόνην γὰρ οὐδὲν μεταβάλλει τοῦ εἶναι, ὥσπερ ἀλλοιουμένου μὲν τὸ ποιόν, αὐξανομένου δὲ καὶ φθίνοντος τὸ ποσόν. Similarly the soul, if self-motion is its essential nature, its logical essence, is, *quâ* moved, no longer after motion what it was before. It might even be said to have become παρὰ φύσιν. Cf. *De Cael.* I. 3, 286 a 18—20 ὕστερον δὲ τὸ παρὰ φύσιν τοῦ κατὰ φύσιν, καὶ ἔκστασίς τίς ἐστιν ἐν τῇ γενέσει τὸ παρὰ φύσιν τοῦ κατὰ φύσιν. Cf. Philop. 113, 14 καὶ ἡ ψυχὴ οὖν εἰ καθὸ ψυχή ἐστι καὶ κατ' οὐσίαν κινεῖται, ἐκσταίη ἂν τῆς οὐσίας ἑαυτῆς καὶ φθαρήσεται. Philop. appeals to Pl. *Phaedr.* 245 E. He justly remarks (114, 12) that A.'s contention is οὐκ αὐτὴ ἑαυτὴν κινεῖ, ἀλλ' ἔστιν ἐν αὐτῇ τὸ μὲν κινοῦν τὸ δὲ κινούμενον. Cf. 409 a 10—18.

b 15 ἔνιοι δὲ...16 ὡς αὐτὴ κινεῖται. This view attributes not merely spatial motion in general to the soul but movements corresponding exactly in detail to those of the body (406 a 31). It might have been held by any pre-Socratic philosopher who regarded the soul as a material thing enclosed in the body. The view implies (1) the soul is in the body, (2) the soul has definite spatial motions, (3) these it communicates to the body in which it resides. From Lucretius III. 370—3 it would appear that atoms of soul and atoms of body are, according to Democritus, arranged alternately in the animal, *singula privis adposita*.

b 17. οἷον Δημόκριτος. Cf. 409 a 32—b 4, Aet. IV. 3, 5 (*Doxogr. Gr.* 388) ὅπερ σῶμα εἶναι. **Φιλίππῳ.** *Frag. Com. Gr.* II. 172, fr. 22 Koch. Philippus was a son of Aristophanes, and a poet of the Middle Comedy. He wrote among other plays a *Daedalus*. Them. (19, 10 H., 34, 27 Sp.) says that Daedalus in this play claims to have made a moving Aphrodite: φησὶ γὰρ ὁ Δαίδαλος παρ' αὐτῷ κινουμένην ποιῆσαι τὴν ξυλίνην Ἀφροδίτην ἐγχέας ἄργυρον χυτόν. Cf. Meineke, *Frag. Com. Gr.* I. 340 sqq.; Philop. 114, 37.

b 20 κινουμένας γάρ...22 τὸ σῶμα πᾶν. Join διὰ τὸ πεφυκέναι μηδέποτε μένειν with κινουμένας. Cf. 404 a 11 sq. This quality of restless mobility is due ultimately to their shape, 405 a 8—13. The spherical atoms are here designated "indivisible spheres." Cf. 409 a 12 σφαιρίων, 409 b 9 σφαίρας μικράς. Being mobile themselves, they communicate motion to whatever they come in contact with, in this case the atoms of the body in which they are enclosed. Cf. generally 404 a 5—16, 409 a 31—b 11.

b 21. συνεφέλκειν = συγκινεῖν ἑαυταῖς. This explanation of the motion of the body reduces it to a species of push and leverage (Philop. 114, 29 τῷ κινεῖσθαι τὴν ψυχὴν κινεῖν τὸ σῶμα ὤσει καὶ μοχλείᾳ τινί), which, as Philop. observes, is equally involved in the argument adduced above (406 a 30—b 5).

b 22 ἡμεῖς δ' ἐρωτήσομεν...23 ταὐτὰ ταῦτα. The constant motion of the atoms of soul is put forward as the reason why the body moves: what then is the cause of its rest? Cf. *Phys.* VIII. 6, 258 b 23 δῆλον γὰρ ὡς αἴτιον τοῖς αὐτὰ ἑαυτὰ κινοῦσίν ἐστί τι τοῦ ὁτὲ μὲν εἶναι ὁτὲ δὲ μή.

b 24 ὅλως δ' οὐχ οὕτω...25 νοήσεως. A general argument, disposing of the whole theory that soul moves itself and the body thus mechanically by an appeal to the fact (φαίνεται) that man is acted upon by final causes. Cf. the sweeping argument *De Gen. et Corr.* II. 6, 334 a 10—15. We may paraphrase οὕτω "by impact and pressure," physical causes which imply contact. To this mode of causation A. opposes a species of purpose προαίρεσίς τις, which he subsumes under the general notion of thought (νόησις). Cf. 433 b 11 τοῦτο γὰρ [int. τὸ ὀρεκτόν] κινεῖ οὐ κινούμενον τῷ νοηθῆναι ἢ φαντασθῆναι. In the full discussion of προαίρεσις in *Eth. Nic.* III., c. 2 we are told, amongst other things (1112 a 15), ἡ προαίρεσις μετὰ λόγου καὶ διανοίας, and, as Trend. remarks, νόησις in the present passage must be taken in this wider and vaguer sense. It does not bear the special sense emphasised e.g. in 430 a 26, or of the passages in which νοῦς θεωρητικός is distinguished from νοῦς πρακτικός. Cf. III., c. 10, esp. 433 a 9—13, which shows, if proof were needed, that for irrational animals φαντασία ranks as νόησίς τις. Cf. also 429 a 4—9. Properly speaking, no irrational animal has προαίρεσις. *Eth. Nic.* 1111 b 8 sq. τοῦ μὲν γὰρ ἑκουσίου καὶ παῖδες καὶ τἆλλα ζῷα κοινωνεῖ, προαιρέσεως δ' οὔ, καὶ τὰ ἐξαίφνης ἑκούσια μὲν λέγομεν, κατὰ προαίρεσιν δ' οὔ. Alex. Aphr. neatly sums up *De An. Mantissa* (106, 11) ἡ δὲ ψυχὴ κινεῖ τῷ κατ' αὐτὴν ἡμᾶς νοεῖν τε καὶ προαιρεῖσθαι· τὸ μὲν οὖν ἀγαθὸν τῷ νοηθῆναι κινεῖ, ἡ δὲ ψυχὴ τῷ νοῆσαι.

b 26. ὁ Τίμαιος. The article denotes the principal speaker in the dialogue of Plato. The form of the reference can be paralleled elsewhere in A., e.g. *Pol.* 1342 a 32 ὁ ἐν τῇ Πολιτείᾳ Σωκράτης, 1261 b 19, 21, 1316 a 2 *et saepe.* Again *ib.* 1265 a 11 πάντες οἱ τοῦ Σωκράτους λόγοι, where by an odd lapse of memory A. includes the *Laws*, although Socrates is not mentioned as taking part in that Platonic dialogue. Similarly 1260 a 22—28 there seems to be a clear reference to the *Meno*, although the practice of Gorgias is merely reported in the dialogue, in which he takes no part. We may suppose that Plato in putting his views into the mouth of Timaeus, the Pythagorean philosopher of Locri in Italy, was in this case guided by the consideration that a physical discourse would have been unsuitable in the mouth of Socrates. Cf. Xen. *Memor.* I. 1, §§ 11—15; Pl. *Apol.* 19 B—D, 26 D sqq.; Ar. *Metaph.* 987 b 1 sq.

b 26 φυσιολογεῖ...27 τὸ σῶμα. A. uses φυσιολόγος in nearly the same sense as φυσικός. In treating of the history of philosophy he is fond of applying the name to the early Ionians, οἱ πρῶτοι φυσιολογήσαντες. *Metaph.* 986 b 14, 989 b 30, 992 b 4. The verb, elsewhere used absolutely, *Metaph.* 988 b 27 φυσιολογεῖν περὶ πάντων, is here constructed with accusative and infinitive, "gives a physicist's account of the matter to the effect that the soul sets the body in motion."

b 27 τῷ γὰρ κινεῖσθαι αὐτήν...407 a 2 κινήσεις. Here follows an abstract of the famous passage, known even in antiquity as the Ψυχογονία of the *Timaeus* (34 B sqq.). The narrative is obviously mythical in form and, partly for this reason, has been the occasion of much controversy in all ages. The divergent opinions of the ancients may be gathered from Plutarch's tract *De Animae Procreatione in Timaeo Platonis* as well as from the commentaries of Proclus and Chalcidius on the *Timaeus*. A. in the present passage appears to treat the account as literal statement of fact, and bases his objections upon this interpretation as if there were no other; although, as we learn from Plutarch,

contemporary Platonists maintained that the story of creation was not to be taken literally.

b 27. καὶ τὸ σῶμα κινεῖν διὰ τὸ συμπεπλέχθαι πρὸς αὐτό. Cf. Pl. *Tim.* 34 B and 36 E sqq. The soul is moved (b 27) of itself (*κινεῖσθαι αὐτήν*): this motion it communicates to the body, (34 A) *κίνησιν γὰρ ἀπένειμεν αὐτῷ* [sc. *τῷ κόσμῳ*] *τὴν τοῦ σώματος οἰκείαν, τῶν ἑπτὰ τὴν περὶ νοῦν καὶ φρόνησιν μάλιστα οὖσαν* [i.e. circular motion or revolution, *περίοδος*]: this is because soul is interwoven with body (*συμπέπλεκται*): *Tim.* 36 E *ἡ δ' ἐκ μέσου πρὸς τὸν ἔσχατον οὐρανὸν πάντῃ διαπλακεῖσα κύκλῳ τε αὐτὸν ἔξωθεν περικαλύψασα.* The soul and body are the soul and body of the universe (*κόσμος = οὐρανός = τὸ πᾶν.* Cf. 406 b 30, 407 a 3) which is a living creature (*Tim.* 30 B) comprehending in itself all particular living creatures with souls and bodies (*Tim.* 30 C—31 B).

b 28. συνεστηκυῖαν γὰρ ἐκ τῶν στοιχείων. Cf. 404 b 17. In *Tim.* 35 A these constituents of soul are designated *ταὐτό, θάτερον* and *οὐσία*, the last being itself a compound of the two former. Cf. 36 C, 37 A, B. These *στοιχεῖα* may have had other names in other expositions of Plato's doctrine, e.g. One, Other, or, with the greater importance assumed by the idea-numbers, One, Two. Even in the *Timaeus* the soul can hardly be described as simple or uncompounded.

b 29. μεμερισμένην. The division of the soul is fully described in *Tim.* 35 B—36 B: the "harmonic numbers" being those which determine the great musical scale of three octaves. Cf. 37 A *ἀνὰ λόγον μερισθεῖσα.*

b 29. ὅπως αἴσθησίν τε σύμφυτον ἁρμονίας ἔχῃ. This purpose seems sufficiently indicated by *Tim.* 37 A, B: but the words *αἴσθησιν ξύμφυτον* actually first occur in 42 A, where they are used of the particular soul.

b 30. καὶ τὸ πᾶν φέρηται συμφώνους φοράς. In the *Timaeus* the universe is introduced as moving with uniform revolution, 34 A. When the constitution of the soul has been described, we hear of two revolutions in opposite directions, viz. in the circle of the Same and in the circle of the Other. The latter consists of seven circles, the orbits of the planets, including under the term sun and moon. All these revolutions are determined by ratio and harmony *κύκλους...ἐν λόγῳ φερομένους* 36 D. They are *σύμφωνοι* because the circle of the Same controls the circle of the Other: 36 C *κράτος ἔδωκε τῇ ταὐτοῦ καὶ ὁμοίου περιφορᾷ.* The adjustment of the velocities of the planetary orbits is explained 39 B.

b 31 τὴν εὐθυωρίαν...407 a 1 κύκλους. A. has condensed the Platonic account: the most relevant passage is *Tim.* 36 B *ταύτην οὖν τὴν ξύστασιν πᾶσαν διπλῆν κατὰ μῆκος σχίσας μέσην πρὸς μέσην ἑκατέραν ἀλλήλαις οἷον χῖ προσβαλὼν κατέκαμψεν, εἰς ἓν κύκλῳ ξυνάψας αὐταῖς τε καὶ ἀλλήλαις ἐν τῷ καταντικρὺ τῆς προσβολῆς, καὶ τῇ κατὰ ταὐτὰ καὶ ἐν ταὐτῷ περιαγομένῃ κινήσει πέριξ αὐτὰς ἔλαβε, καὶ τὸν μὲν ἔξω, τὸν δ' ἐντὸς ἐποιεῖτο τῶν κύκλων*...36 D *τὴν δ' ἐντὸς* [sc. *φορὰν*] *σχίσας ἑξαχῇ ἑπτὰ κύκλους ἀνίσους...κατὰ τἀναντία μὲν ἀλλήλοις προσέταξεν ἰέναι τοὺς κύκλους.*

b 31. τὴν εὐθυωρίαν. The preceding participles agree grammatically with this word, which obviously refers to the soul, the soul of the universe. The same thought might have been expressed by saying that "he bent it" (the soul) "from a straight line (*ἐξ εὐθυωρίας*) into a circle." As it stands the word, which properly means "straight course" or "direction," must be understood of a "straight piece" or "riband" of soul. In Plato it is the mixture (*ξύστασις*) constituting soul which is slit or bent. **εἰς κύκλον κατέκαμψεν** = *κατέκαμψεν, εἰς ἓν κύκλῳ ξυνάψας* in Pl. *Tim.* 36 B cited above. In Plato the splitting occurs first, the bending afterwards.

b 32. καὶ διελὼν...συνημμένους. Plato says (*loc. cit.*) that the Creator, having cleft the soul lengthwise in twain, laid the two halves across in the shape of X,

bent them round and joined them again at a point opposite to that of their original contact (i.e. the centre of **X**).

407 a 1. τὸν ἕνα. By this is meant Plato's circle of the Other, comprehending the orbits of the sun, moon and the five planets known to the ancients (*Timaeus* 36 D cited above). **ὡς οὔσας τὰς τοῦ οὐρανοῦ φορὰς τὰς τῆς ψυχῆς κινήσεις.** The construction is accus. abs. In this identical proposition A. probably meant *φοράς* to be subject. Them. (20, 14 H., 36, 28 Sp.) paraphrases the assumption contained in this clause as follows: *καὶ διὰ τοῦτο κύκλῳ κινεῖσθαι τὸν οὐρανόν, ὅτι κύκλος ἦν ἡ ψυχή*, that is, the soul of the universe is a circle and therefore the universe itself revolves in a circle. There is apparently no explicit statement of the kind in the dialogue, but as the universe is declared in the strongest terms to be a *ζῷον* and to be intelligent in virtue of its intellect, which is in soul as soul is in body (30 B), it would seem to be implied that, as in the case of other *ζῷα*, the movements of the universe are due to its soul, in fact *are* the movements of the soul of the universe. Soul governs body, we are told (34 C), and the circular motion first attributed to the universe as a whole (viz. *τὴν τοῦ σώματος οἰκείαν* 34 A) is repeatedly attributed to its soul (36 C, E, 37 A).

407 a 2—b 26. Here follow eight objections based upon the details of the account in the *Timaeus* literally interpreted. (1) Soul is not a magnitude (407 a 2—10). (2) If it were, it would be impossible to explain the process of thought (407 a 10—22). (3) Thought would be infinite if eternal, whereas all processes of thought are finite (407 a 22—31). (4) Thought would be a recurring cycle (407 a 31—32). (5) As a fact thought implies rest rather than motion (407 a 32—b 2). (6) The inextricable implication of soul with body is a defect of the theory (407 b 2—5). (7) No teleological explanation is furnished of the motion of the universe (407 b 5—11). Finally (8) this theory shares with others the disadvantage that it fails to account for the dependence of a particular soul upon a particular body (407 b 12—26).

407 a 2. οὐ καλῶς. Int. *ἔχει*.

a 3. τὸ λέγειν τὴν ψυχὴν μέγεθος εἶναι. Cf. 407 a 16 *τί δεῖ μέγεθος ἔχειν;* A.'s own view, that *νοῦς* is *ἀμερής* and therefore *οὐδὲν ἔχων μέγεθος* (cf. *Phys.* VIII. 10, 266 a 10) comes out clearly in the course of the argument. On *μέγεθος* see *Ind. Ar.* s.v. 448 b 35. It is either (1) the abstract of *μέγας*, magnitude, size, extension, i.e. *ποσότης* (cf. 418 a 18), or (2) something concrete, *ποσόν τι, συνεχές, διαιρετόν*. Thus the term is used sometimes for *γραμμή*, sometimes for *ἐπίπεδον*. Sed plerumque *τὸ μέγεθος* ubi ad unam potissimum speciem refertur *τὸ σῶμα* significat, e.g. the atoms of Democritus are *ἀδιαίρετα μεγέθη*. Cf. 432 a 4 *τὰ μεγέθη τὰ αἰσθητά*. Lines, surfaces and solids are the three kinds of *μέγεθος*: see *note* on 423 a 22. The objection implies that the soul is a mathematical object, but not necessarily that it is material or corporeal. This consideration has its full force whether we interpret the account in the *Timaeus* literally, or treat it as a myth. A circle (or a pair of circles meeting in two points) would be *μέγεθος ὡς γραμμή*. We must further remember that Plato and Aristotle differ fundamentally as to the nature and mode of existence of mathematical objects, lines, surfaces and solids. To the former they are objective realities and more real than the things of sense: to A. they are indeed *ὄντα*, but *οὐχ ἁπλῶς ὄντα*, being obtained by abstraction from things of sense, by whose existence their very existence is conditioned, *λόγῳ πρότερα* but *τῇ οὐσίᾳ ὕστερα*.

a 3. τὴν γὰρ τοῦ παντός, int. *ψυχήν*. The argument is as follows. By soul Plato must mean thinking soul or *νοῦς*, and not soul as possessed of perception, anger or desire, the movement of which is not circular. But the unity or continuity of

thinking mind, like that of thought, is comparable to that of numerable quantity, not to that of extended or measurable quantity : in other words is a unity of succession (*τῷ ἐφεξῆς ἕν*), not a unity of co-existence. In *Metaph.* 1020 a 8 quantity is divided into *ποσὸν ἀριθμητόν* = *πλῆθος* and *ποσὸν μετρητόν* = *μέγεθος* : the former being discrete, the latter continuous.

a 4. δῆλον ὅτι...ὁ καλούμενος νοῦς. The subject of *βούλεται* is *ὁ Τίμαιος*. A.'s characteristic caution appears in *τοιαύτην οἷον* and *ὁ καλούμενος νοῦς*. Cf. 429 a 22, 432 b 26 with *notes*: and for a similar sense of *καλούμενος* 420 b 28, 423 b 30, 433 a 31.

a 5. οὐ γὰρ δὴ...ἡ ἐπιθυμητική. In the *Timaeus* these faculties are introduced later, with the creation of particular souls, *Tim.* 42 A. Cf. Them. 20, 23—6 H., 37, 11—16 Sp. In fact, Plato identifies the true nature of soul with reason so fully that he adds an explanation of sensation and emotion almost on the assumption that they are, so to say, disorders of the reason, the processes of pure reason working irregularly under novel conditions (*Tim.* 43 E sqq. Cf. *Phaedo* 65 E—66 E), the processes of particular, not universal, soul.

a 6. οὐ κυκλοφορία. Cf. *Tim.* 43 C—44 C. Them. 20, 25 H., 37, 14 Sp. *καὶ γὰρ ἡ αἴσθησις ὥσπερ κατ' εὐθεῖαν ἐπὶ τὰ ἔξω καὶ παραπλησίως ἡ ὄρεξις.* Philop. 125. 1 *εὐθεῖαι γάρ τινές εἰσιν* [sc. *ἡ αἰσθητικὴ ἢ* (leg. *καὶ*) *ἡ θυμοειδὴς ἢ ἡ ἐπιθυμητική*]. *αἵ τε γὰρ ὄψεις ἀπὸ τῶν ὀφθαλμῶν κατ' εὐθεῖαν ἐκπέμπονται καὶ πάλιν ἐν ταῖς ἀνακλάσεσι παλινδρομοῦσαι κατὰ τὴν αὐτὴν εὐθεῖαν ἐπανακάμπτουσι* (which agrees with *Tim.* 45 C), *θυμὸς δὲ καὶ ἐπιθυμία πρόοδοι τινές εἰσιν εὐθείας μιμούμεναι.*

a 6. ὁ δὲ νοῦς εἷς καὶ συνεχὴς ὥσπερ καὶ ἡ νόησις. Having thus established that the soul of the universe is *νοῦς* alone to the exclusion of other faculties, A. proceeds with his usual method (cf. I., c. 3 ad init.) to deduce from the proposition he is attacking conclusions which contradict it. According to his own physical theory, every magnitude is continuous (*Phys.* IV. 11, 219 a 11 *πᾶν μέγεθος συνεχές*, VI. 2, 233 a 11 *μέγεθος ἅπαν ἐστὶ συνεχές*) and potentially capable of subdivision into magnitudes which are continuous, *Metaph.* 1020 a 10 *λέγεται δὲ πλῆθος μὲν τὸ διαιρετὸν δυνάμει εἰς μὴ συνεχῆ, μέγεθος δὲ τὸ εἰς συνεχῆ* : its unity is due to this continuity. Herein it differs from discrete quantity or number, which derives such continuity as it has from succession. Philop. (126, 3) makes A. say : 'So far from allowing *νοῦς* to be continuous, I should with better reason affirm it to be discontinuous (*διωρισμένος*). If it could be said to be continuous at all, it will be so in the same sense as discrete quantity or number, since the different numbers follow in a definite order of succession which allows nothing else to come between them.' The proof for *νοῦς* anticipates the doctrine of III., cc. 4—8. *Νοῦς* is taken to be *ὁ κατ' ἐνέργειαν* in contradistinction to potential *νοῦς*: Philop. 126, 21 *ἐνέργεια δὲ τοῦ νοῦ ἡ νόησις, ἡ δὲ νόησις οὐδὲν ἄλλο ἐστιν ἢ τὰ νοήματα, ὥσπερ καὶ ἡ κατ' ἐνέργειαν αἴσθησις τὰ αἰσθήματα.* To the same effect Them. 20, 27 H., 37, 18 Sp. *μέγεθος μὲν γὰρ ἅπαν συνεχές, καὶ οὕτως ἐν τῷ συνεχὲς εἶναι καὶ τῷ συνάπτειν αὐτοῦ πρός τινα κοινὸν ὅρον τὰ μόρια· ὁ δὲ νοῦς εἷς καὶ συνεχὴς κατ' ἄλλον τρόπον, εἰ δεῖ τὸ συνεχὲς ὅλως ἐπ' αὐτοῦ λέγειν.* The identity of *νοῦς* in actuality with *νόησις* follows from the statement (429 a 24, b 31) that *νοῦς* is nothing in actuality prior to thinking.

a 7. ἡ δὲ νόησις τὰ νοήματα. The process of actual thinking, the *ἐνέργεια* of *νοῦς*, finds expression in *νοήματα*, each of which is a single notion or conception, either as the thought of something indivisible or as the unity of two indivisibles in a judgment, whether affirmative or negative. This is further developed and explained in III., c. 6. Cf. III. 8, 432 a 8—14.

a 8. ταῦτα δὲ...ὡς τὸ μέγεθος. The Greek commentators dwell more particularly on ratiocination : e.g. Them. 20, 34 H., 37, 27 Sp. *ὅταν γὰρ τόδε μετὰ τόδε*

νοῶμεν, διωρισμένα μὲν τὰ νοήματα, τὸ δὲ ἐφεξῆς ἀλλήλοις ἔχει, καὶ τελευτᾷ εἰς ἓν πολλάκις τὰ πλείω, ὥσπερ ἐν τοῖς συλλογισμοῖς τὰ λήμματα εἰς τὸ συμπέρασμα, ἀλλ' οὐ τῷ συνεχῆ εἶναι, οὐδὲ τῷ πρὸς ὅρον κοινὸν συνάπτειν. To the same effect Philop. 126, 24—29 and Simpl. 42, 13—33. The train of thoughts passes from one discrete item to another; what continuity it has is due to the succession. M. Rodier seeks to show that the same holds with single notions: the parts of the definition are subordinate, not coordinate; hence the suppression of one may involve the suppression of the others but not *vice versa*, which also has a parallel in the numerical series. In support of this he cites *Metaph.* 1035 b 4—7, *Categ.* 13, 15 a 4 sq., 12, 14 a 31 sq. On the relative priority of One in the numerical series see also *Metaph.* 1084 b 13—16. Trend. 209 Νοήματα, i.e. quae mens excogitavit, unum sunt, quoniam partes lege quadam sese excipiunt (τῷ ἐφεξῆς), nulla tam spatii continuitate cohaerentes; sunt igitur, quemadmodum numerus, cuius partes nec extra se positae neque externo vinculo connexae, sed sola cogitationis vi ad unitatem quandam redactae. Itaque mens aut partium ignara est aut certe non tanquam magnitudo continua. Continuity (and therefore Unity) of succession is a kind of bastard unity, κατὰ τὴν ἀναλογίαν συνεχές as Philop. 127, 2 calls it. The problem thus raised involves the question, Does mind always think? on which see 430 a 5 sq., 430 a 22.

a 9 διόπερ...10 ὡς μέγεθός τι συνεχής. The first opinion, as will appear from 430 b 15, is A.'s own. This is the negation of μέγεθος ἔχειν *Metaph.* 1073 a 5 δέδεικται δὲ καὶ ὅτι μέγεθος οὐδὲν ἔχειν ἐνδέχεται ταύτην τὴν οὐσίαν [viz. ἀΐδιος οὐσία which is the prime movent and the Deity], ἀλλ' ἀμερὴς καὶ ἀδιαίρετός ἐστιν. If νοῦς be ἀμερής, by another of A.'s physical principles, it is incapable of motion, *Phys.* VIII. 10. 240 b 30 οὐκ ἐνδέχεται τὸ ἀμερὲς κινεῖσθαι οὐδ' ὅλως μεταβάλλειν.

a 10 πῶς γὰρ δὴ...22 [νόησις]. A new objection. How will Mind think, if it be extended? The context shows that what A. means is: "Granting that the movement (κίνησις) of mind is thought, and the movement of a circle revolution, what analogy is there between the two to justify Plato in using the one to represent the other?" Themistius (21, 4 H., 38, 10 Sp.) in his paraphrase supplies a necessary premiss: "How will Mind think, especially if soul and mind need contact or contiguity with the object of thought?" εἰ...ἁφῆς χρεία τῇ ψυχῇ καὶ τῷ νῷ καὶ πελάσεως πρὸς τὸ νοούμενον. Hence θιγὼν had better be supplied with ὁτῳοῦν μορίῳ (407 a 11) and *ib.* κατὰ μέγεθος. The evidence for πότερον is the unsupported first hand of E, except that vet. transl. and Soph. (21, 7; 22, 23) point to πότερον καθ' ὅλον ἢ which Torstrik accepted, inserting θιγὼν in the text before ἤ. I prefer to understand θιγὼν rather than to insert it. Three alternative hypotheses present themselves; or rather two, one of which is subdivided; that is to say (1) that soul thinks by means of its parts severally, whether these parts be (*a*) magnitudes or (*b*) points, a 11—17, or (2) that soul as a whole apprehends its object as a whole, a 17 sq. Difficulties confront us on either hypothesis. Taking (1 *b*) first, point after point of the circle as it revolves comes into contact with the object, and as there is an infinity of such points, it will take an infinite time for mind to apprehend its object. On the other hand, on assumption (1 *a*) if an extended part (μέγεθος) of the circle comes in contact with the object, the process of thinking will involve a constant repetition in which the same object is thought again and again: which is contrary to experience. Again, if contact by means of a single part is sufficient, the supposed revolutions of the circle and the circle itself as merely extended become superfluous. On hypothesis (2) i.e. if the whole circle is required in order to apprehend anything in thought, what part is played by the point by point contact? There is a further difficulty on either hypothesis, viz. that the procedure is the same whether the object of

thought be divisible or indivisible. On hypothesis (1) how can what is indivisible be apprehended by what is divisible? On hypothesis (2) how can what is divisible be apprehended by what is indivisible?

a 12. εἰ δεῖ καὶ τοῦτο μόριον εἰπεῖν. Τοῦτο = τὴν στιγμήν: attracted to the gender of *μόριον*. This assumption A. would not himself concede: *Phys.* VI. 6, 237 b 7 *αἴτιον δὲ τούτου τὸ μὴ εἶναι ἀμερὲς ἀμεροῦς ἐχόμενον*, *De Gen. et Corr.* I. 2, 317 a 10 sq. *οὐ γάρ ἐστιν ἐχόμενον σημεῖον σημείου ἢ στιγμὴ στιγμῆς*, *De Cael.* II. 13. 296 a 16 *οὐθὲν γὰρ στιγμὴ τῶν σωμάτων ἐστίν*. According to A. the line is potentially, not actually, divisible into points: the point or "unit having position" is not the constituent element out of which even the line is compounded (*σύγκειται*, *Phys.* IV. 8, 215 b 19), much less is it any real part of bodies. In every line there are an infinite number of points *δυνάμει μέν, ἐντελεχείᾳ δ' οὔ*. **εἰ μὲν οὖν κατὰ στιγμήν.** Supply *θιγὼν νοήσει* (or *θίξεται*) as above, and similarly below (a 14) with *εἰ δὲ κατὰ μέγεθος*.

a 14. πολλάκις...νοήσει τὸ αὐτό. This follows from A.'s doctrine that extended magnitude is divisible into a finite or infinite number of parts, each itself a magnitude. The contact with successive parts, which *ex hypothesi* is thinking, will not be a single instantaneous act, the cogitant subject will travel over the parts of the extended object, and this will take time. If the extended object is infinitely divisible, it may take infinite time over thinking that one thing. Cf. Simpl. 43, 31 *διαιρεῖν γὰρ ἀνάγκη, ἐπειδὴ καὶ μέγεθος καὶ κινούμενον ὑπόκειται νοεῖν. τί οὖν ἄτοπον; ὅτι πολλάκις ἢ ἀπειράκις νοήσει τὸ αὐτό. πολλάκις μέν, εἰ ὡρισμένα τὰ μεγέθη, εἰς ἃ ἡ διαίρεσις εἴη, ἀπειράκις δέ, εἰ ἀόριστα, τῷ ἀεὶ τὸ δεύτερον τοῦ πρὸ ἑαυτοῦ ἥμισυ φέρε ἢ τρίτον λαμβάνεσθαι. ἀνάγκη οὖν, εἰ μέλλοι τῷ ὅλῳ ἡ τοῦ προκειμένου γνῶσις ἐγγίνεσθαι, πολλάκις ἢ ἀπειράκις, καὶ διὰ τὸ μηδέποτε διεξιέναι ἀδύνατον· τὸ δὲ πολλάκις καὶ αὐτὸ ἄτοπον.*

a 15. ἐνδεχόμενον, int. *νοῆσαι*, in a single instantaneous act of thought, according to A., *ἅμα νοεῖ καὶ νενόηκε*.

a 18. τίς ἐστιν ἡ τοῖς μορίοις θίξις; What does the contact with the parts mean? What is its rôle, its raison d'être? For other instances of a criticism conveyed by interrogation cf. *De Sensu* 2, 437 b 15 *τίς γὰρ ἀπόσβεσις φωτός ἐστιν;* 438 a 29 *τό τε γὰρ συμφύεσθαι τί ἐστι φωτὶ πρὸς φῶς;* *Metaph.* 991 a 22. The interrogation implies that little or nothing can be made of the explanation provided. The *ἀπορία* of *Metaph.* 1075 a 5—7 is not quite the same.

a 19 ἀναγκαῖον...22 περιφορὰ [νόησις]. A. is aware that his objection may be met by drawing a distinction between the soul and the circle in the *Timaeus*. It might be said that the circle is the matter or the necessary condition and instrument of the soul. The argument is put clearly and succinctly by Simplicius, "How, then, does he infer that mind is this circle? By arguing from the following premiss: Things which have their operations identical also have identical natures or essences," Simpl. 46, 11 *ὧν αἱ ἐνέργειαι αἱ αὐταί, τούτων καὶ αἱ οὐσίαι.* The operation of *νοῦς* is *νόησις*, the operation of the circle is its revolution. Now the revolution of the circle *is* declared to be thinking (*νόησις*), and, things whose operation is one and the same being themselves one and the same, mind and the circle are identical. A. proceeds (a 21 *εἰ οὖν ἡ νόησις περιφορά*), "If then we equate the revolution of the circle with thinking": the implication being that we are justified by the *Timaeus* in doing so. Cf. *Tim.* 37 A—C *αὐτή τε ἀνακυκλουμένη πρὸς αὑτὴν...λέγει κινουμένη διὰ πάσης ἑαυτῆς κτέ.*, and this declaration of soul (*λόγος*) consists of true beliefs, true opinions, knowledge and reason (*νοῦς*). Cf. 36 E *αὐτὴ ἐν αὑτῇ στρεφομένη, θείαν ἀρχὴν ἤρξατο ἀπαύστου καὶ ἔμφρονος βίου*, 47 B *ἵνα τὰς ἐν οὐρανῷ τοῦ νοῦ κατιδόντες περιόδους χρησαίμεθα ἐπὶ τὰς περιφορὰς τὰς τῆς παρ' ἡμῖν διανοήσεως, ξυγγενεῖς ἐκείναις οὔσας.*

Torstrik (p. 121) bracketed νόησις with the following comment:—Ut ostenderet hunc Platonis orbem (τὸν κύκλον τοῦτον) esse mentem, id quod diserte Plato nusquam dicit (cp. a 3—5), Aristoteles hanc ponit proportionem:

κύκλος : περιφορά = νοῦς : νόησις.

Quodsi ἡ νόησις est περιφορά τις, sequitur ut ὁ νοῦς sit κύκλος τις. Qualis vero orbis? nimirum cuius motio talis, ἡ τοιαυτή, hoc est νόησις, est. There is no trace of νόησις in the ancient commentators. It may be a marginal gloss upon ἡ τοιαύτη περιφορά. Its retention in the text favours the incorrect interpretation "the circle of which the revolution described is thought," but such an interpretation misrepresents the argument.

a 20. τὸν κύκλον τοῦτον, i.e. the circle which has been described in the ψυχογονία: see Torstrik as cited in the last note. So Simplicius. It seems very doubtful whether οὗτος is ever used, as some have supposed, like ὅδε, technically to distinguish a sensible or particular thing from an idea, cf. *supr.* (note on 403 a 14). It has been suggested that in the present case it is used deictically, that is to say, A. may have had a diagram before him.

a 22 ἀεὶ δὲ δή τι...31 πεπερασμένοι. (Objection 3.) The identity of thinking mind and the revolving circle having been established, it follows that thought, like this revolution, is an endless process. But it can be shown that both theoretical and practical thinking, as we know them, have limits, i.e. come to an end.

a 22. ἀεὶ δὲ δή τι νοήσει. Bekker and Trend. edited δή τι (indefinite pronoun), Torstrik restored the interrogative τί, appealing to the sense of the passage and to Philop. and Simpl. (Torst. p. 121) Interrogationem esse et ipsa sententia ostendit et Simplicius Philoponusque: quorum ille [46, 25] ἐρωτᾷ οὖν, τί ἀεὶ νόησει; hic [133, 6 sq.] τί οὖν τοῦτό ἐστιν; and this would agree with the form of the preceding objections [407 a 10] πῶς γὰρ δὴ καὶ νόησει, a 16 τί δεῖ κύκλῳ κτέ., a 18 ἔτι δὲ πῶς. But the position of ἀεὶ and the subsequent argument show that the point now raised is whether thought is finite or infinite. We return to the object of thought at 407 a 31, 2. The question whether we should read τί or τι can hardly be settled by authority. All our MSS., with Sophonias, take τι indefinitely; from the nature of the case, this is only the expression of an individual opinion by copyist or commentator. Philoponus (132, 26 sqq., 28; 133, 1) interprets τι indefinite. It is true that he continues (133, 3) μήποτε οὖν τοῦτό φησι ὅτι τὸ αὐτὸ ἀεὶ νοήσει τῷ μηδέποτε ὅλον νενοηκέναι· ἡ γὰρ ὁμοία καὶ ὡσαύτως ἔχουσα περιφορὰ περὶ ταὐτοῦ τινος ἔσται. δεήσει οὖν τοιοῦτον εἶναι τὸ νοούμενον, ὃ οὐδέποτε νενοημένον ἔσται. τί οὖν τοῦτό ἐστιν; ὅτι δὲ οὐδεμία ἐστὶν ἄπειρος νόησις διὰ τῶν ἑξῆς ἐπάγει. But, though at first sight the interrogation seems to bear out Torstrik's conclusion, a careful study of the whole context convinces me that Philop. is supplying what he regards as a missing link in the argument. "Mind will always be thinking of something which is the same" is still (133, 4), as before (132, 26 sqq.), his paraphrase of ἀεὶ δὲ δή τι νοήσει; "if so, the object of thought will be something, the thinking of which will never be completed (133, 6). What, then, is this object?" [=there is no such object]. "A. goes on to prove that there is no such thing as ἄπειρος νόησις." Them. (22, 15 H., 40, 16 Sp., which will be found cited in note on 407 a 31) takes much the same line as Philop. There is a similar uncertainty in *Metaph.* 989 a 28 τὶ γὰρ ἂν αὐτὰ πάσχοι τἀναντία, καὶ τὶς ἂν εἴη μία φύσις ἡ γιγνομένη πῦρ καὶ ὕδωρ, where the indefinite pronouns τὶ, τὶς have been restored from Asclepius by Bonitz and Christ, all previous editors having given τί and τίς. Another doubtful case is *Phys.* II. 2, 194 b 11, as we learn from Simpl. *in Phys.*, who cites Alex. Aphr. as evidence for one of the two readings.

a 23. τῶν μὲν γὰρ πρακτικῶν νοήσεων ἔστι πέρατα. Practical thinking has in every case a limit; it is bounded by the end sought, the τέλος, οὗ ἕνεκα or οὗ χάριν: 433 a 14 νοῦς δὲ ὁ ἕνεκά του λογιζόμενος καὶ ὁ πρακτικός [int. κινητικὸς κατὰ τόπον ἐστί]· διαφέρει δὲ τοῦ θεωρητικοῦ τῷ τέλει, *Pol.* 1257 b 27 τῶν δὲ πρὸς τὸ τέλος οὐκ εἰς ἄπειρον, πέρας γὰρ τὸ τέλος πᾶσαις. Nor can the series of means to the end be other than finite, else the end would be incapable of realisation. Such a series of steps necessary to be taken if a given result, e.g. health, is to be brought about begins with the end in view and stops at something within the agent's power: see *Metaph.* 1032 b 5—23.

a 24 αἱ δὲ θεωρητικαὶ...25 ὁρίζονται. Thinking which is not practical but speculative is delimited or determined because it consists of unspoken propositions (λόγοι), each of which is delimited or determined. Such mental discourse is either definition, which by its very nature is the determination of a concept, or deduction which proceeds from a beginning or premiss to an end or conclusion. The activity of thought is sometimes indivisible, like its object (430 a 26, *Metaph.* 1037 b 3 sq.), but the analytic or discursive function can be exercised even upon such indivisible unities, and their content can only be stated in the form of the judgment (τι κατά τινος) or συμπλοκὴ νοημάτων (430 b 26, 432 a 11), which seems to be the only logical process wide enough to embrace both definition *per genus et differentiam* and demonstration. The terms given by Bz. *Ind. Ar.* 435 a 26 "ratio, argumentum, ratiocinatio" do not properly apply to ὁρισμός. As φάσις and κατάφασις (430 b 26), so λόγος here = mental statement, i.e., predication by which something is thought or predicated of something.

a 27. τὸν συλλογισμὸν ἢ τὸ συμπέρασμα. Cf. *Ind. Ar.* 717 a 38 συλλογισμός est ea ratiocinatio per quam efficitur τὸ συμπέρασμα...*Anal. Prior.* I., cc. 2—4 ubi συμπέρασμα ἀληθές ubivis ad veritatem conclusionis, non ad formam syllogismi refertur. Here the two terms συλλογισμὸς and συμπέρασμα approximate in meaning. **εἰ δὲ μὴ περατοῦνται...28 πάλιν ἐπ' ἀρχήν,** i.e. as the circle returns to its starting-point. There may be a chain of syllogisms, the conclusion of the last forming a premiss of a new syllogism. The laws of the syllogistic process as formulated by A. in *Anal. Post.* I., c. 3 exclude reasoning in a circle, as it is called, i.e. the demonstration in the course of the series of a proposition previously assumed as a premiss (except of course in the case of reciprocating propositions).

a 29. προσλαμβάνουσαι...εὐθυποροῦσιν. The subject to be supplied is αἱ ἀποδείξεις: ἀεὶ probably means "successively" rather than "invariably": μέσον and ἄκρον are the new middle term and extreme term required whenever the demonstration is extended by a fresh syllogism. The constituent elements assumed in every syllogism are three terms and two propositions or premisses; in the major premiss of the first or normal figure A is affirmed (or denied) of all B; in the minor, B is affirmed of all C; in the conclusion A is affirmed (or denied) of all C. A and C are now extremes (ἄκρα). If the demonstration proceeds to a new syllogism by affirming (or denying) C of all D and D of all E, the new conclusion is that C is affirmed (or denied) of all E. We have thus reached a new extreme E by means of a new middle term D; and so on. *Ind. Ar.* 647 a 37 logice προσλαμβάνειν ὅρους, opp. διὰ μέσων, ἐντὸς ἐμβάλλεσθαι. *Anal. Post.* I. 12, 78 a 14 αὔξεται δ' οὐ διὰ τῶν μέσων, ἀλλὰ τῷ προσλαμβάνειν, οἷον τὸ Α τοῦ Β, τοῦτο δὲ τοῦ Γ, πάλιν τοῦτο τοῦ Δ, καὶ τοῦτ' εἰς ἄπειρον. Torstrik defends προσαναλαμβάνουσαι which he introduced into the text from E as follows:—quaeritur solummodo utrum recte ex solo codice E scripserimus προσαναλαμβάνουσαι. Ac profecto omnibus Analyticorum locis quos quidem inspexerim Ar. dicit προσλ. non προσαναλ. idemque videtur in nostrorum librorum editione A scripsisse. Sed optime correxit. In ceteris enim locis, si activo

utitur, subiectum est homo demonstrans, ὁ ἀποδεικνύων, si passivo, auditur ὑπὸ τοῦ ἀποδεικνύντος: hoc nostro loco ipsae demonstrationes sunt subiectum, quae minus recte dicuntur adhibere vel adicere, προσλ., optime in se recipere vel sibi adsciscere vel assumere, προσαναλαμβάνειν, quae quasi in itinere suo invenerint, novos terminos medios et extremos.

a 31. πεπερασμένοι. So *Metaph.* 1043 b 35 οὐ γὰρ ἄπειροι οἱ λόγοι (=ὁρισμοί: cf. *ib.* b 34).

a 31 ἔτι...32 νοεῖν τὸ αὐτό. (Objection 4.) Repeated revolution implies repetition of the same object of thought. This objection seems much the same as that advanced alone in 407 a 14, see *note* on 407 a 10. Them. 22, 15 H., 40, 16 Sp. includes both this and the following argument as essential parts of argument 3. In his paraphrase, after noticing parts of argument 2, the last being 407 a 18, 19, he proceeds ἀλλὰ καὶ ἀίδιος ἡ περιφορά, ἀίδιος οὖν καὶ ἡ νόησις. ἡ τοίνυν αἰεὶ νοεῖ καὶ διὰ τοῦτο ταὐτὸν αἰεί [object. 4], ἢ ἄλλο καὶ ἄλλο. εἰ μὲν γὰρ ταὐτόν, ἠρεμήσει μᾶλλον ἡ τοιαύτη νόησις ἔοικεν [object. 5]· εἰ δὲ ἄλλο καὶ ἄλλο...πότε συντελέσει τὴν νόησιν; [object. 3]. Cf. Philop. 135, 31—136, 1 εἰπὼν ἕπεσθαι τῇ ἀπείρῳ περιφορᾷ τὴν ἄπειρον νόησιν and 132, 26—133, 7 cited *supra* a 22 *note*.

a 32 ἔτι δ' ἡ νόησις...33 κινήσει. (Objection 5.) Thoughts (like syllogisms) find their analogue in rest rather than in motion. This is, from A.'s point of view, a fundamental objection and might well have come first.

a 33. ἐπιστάσει, i.e. a halting or dwelling upon anything. So ἔχειν ἐπίστασιν *Metaph.* 1089 b 25 = to call for or deserve consideration, like ἄξιον ἐπιστάσεως *Phys.* II. 4, 196 a 36.

a 34 ἀλλὰ μὴν...407 b 1 βίαιον. Having urged that rest and not motion is the proper analogue of thought, A. proceeds to show that on this assumption the universe cannot be the "happy" being (cf. *Tim.* 34 B εὐδαίμονα θεόν) of Plato's description, seeing that its endless activity is forced and constrained. Thus regarded, this criticism is not a new objection, but an appendix to the foregoing. Philop. 136, 20 admits both possibilities: δύναται τοῦτο καὶ καθ' ἑαυτὸ εἶναι ἐπιχείρημα καὶ συνῆφθαι τοῖς ἄνω. If it is regarded as a separate argument, he continues, 136, 30: A. having developed the inconsistencies attendant on the hypothesis κατὰ φύσιν κινεῖται ἡ ψυχὴ now turns to consider what follows εἰ μὴ κατὰ φύσιν κινοῖτο. It will then move παρὰ φύσιν and therefore βίᾳ, and its motion, if βίαιος, is οὐ μακάριος. And yet the soul of the universe is required to be μακαρία. Philop. is in similar perplexity whether the succeeding argument is to be considered independent or not, and explains it on both assumptions.

407 b 1. εἰ δ' ἐστὶν ἡ κίνησις αὐτῆς μὴ οὐσία, παρὰ φύσιν ἂν κινοῖτο. αὐτῆς = τῆς ψυχῆς. The text here presents great difficulties. The position of μὴ is unusual, though perhaps not more strange than μὴ κατὰ συμβεβηκός. It is clear, however, that Them. read εἰ δ' ἐστὶν ἡ κίνησις αὐτῆς οὐσία, and his commentary (22, 36—23, 8 H., 41, 17—29 Sp.) gives the impression that he had before him a fuller text, perhaps εἰ δ' ἐστὶν ἡ κίνησις αὐτῆς <οὐσία, πῶς νοήσει τὰ ἀκίνητα; εἰ δὲ> μὴ οὐσία, παρὰ φύσιν ἂν κινοῖτο. On the other hand the comments of Philop. (137, 5—15) and Simpl. (48, 9—14) imply that they had before them our present text, which, if sound, must mean that, if motion is not of its essence, its motion would be unnatural, from which would follow the inference that it would be constrained (βίαιον). The sentence would thus be a justification of the term βίαιον. Or, in Mr Shorey's words (l.c.), "if movement be *not* its essence" in loose writing may be taken as the logical equivalent to "is the negation of its essence." The doubts which will suggest themselves as to the cogency of this reasoning would seem to have been felt by the ancient commentators. Thus Simpl. feels it

necessary to deal with the obvious objection that, even if motion is not of the essence of the universe, yet it does not follow that its motion is unnatural. A. often denotes "non-existence," "non-existent" by *μὴ οὐσία, μὴ ὄν*, e.g. *Metaph.* 1087 a 1, 1089 a 14 sqq., but the proximity of *αὐτῆς*, as well as the unsatisfactory sense afforded, forbids us to take the words *μὴ οὐσία* together here as expressing the single idea "negation of essence."

b 2 ἐπίπονον δὲ...3 ἀπολυθῆναι. (Objection 6.) The inseparable union of the soul with the body of the universe is a hardship to the former, and undesirable. Cf. Simpl. (48, 24—49, 17), who treats the objection very reasonably from his own Neo-Platonic standpoint. Cf. *Metaph.* 1050 b 26 sq., 1074 b 28 sq.

b 4. εἴωθέ τε λέγεσθαι, int. by the Platonists : cf. *Metaph.* 1033 b 27, also 991 a 20 *τῶν εἰωθότων λέγεσθαι*, where Alex. Aphr. *in Metaph.* (100, 25—27 H.) gives this as an explanation of the phrase "as some understood it," *ὥς τινες ἤκουσαν*, though apparently not favouring it himself. Here the case is clear, for the many who approve are obviously distinct from those who make the statement, 407 b 28. Torst. (p. 112): Nam *τέ—καί* a simplici *καί* ita differt ut simplex *καί* iubeat cogitari res coniunctas tanquam coniunctas, *τέ—καί* res coniunctas quidem iubeat cogitari, sed quatenus distinctae sint.

b 5 ἄδηλος δὲ καὶ...6 ἡ αἰτία. No clear cause is assigned for the circular motion of the universe. It does not lie in the nature of the soul of the universe: nor again in that of its body, which is rather moved than movent. Nor is it stated, as might have been expected, in the *Timaeus*, that there is a final cause for this circular motion.

b 7. ἀλλὰ κατὰ συμβεβηκὸς οὕτω κινεῖται. According to Themistius, circular movement is incidental to the soul because it was imposed upon it by the Demiurgus : 23, 14 H., 42, 9 Sp. *εἰ γὰρ δεῖ προσέχειν τοῖς γεγραμμένοις, οὐκ ἔστι τῆς ψυχῆς ἡ οὐσία κυκλοφορία ἀλλ' ἐκ τῆς εὐθυωρίας εἰς κύκλον ὕστερον κατεκάμφθη*, and this he says is to make the soul of the universe move for the sake of its body, citing 406 b 30. But Trend. rightly refuses to regard the motion thus communicated to the soul as accidental: est enim motus, qui animae ipsi inditur, licet non habeat ab initio. Nothing remains, then, but to consider the statement, with Philop. and Simpl., as made by A. from the standpoint of his own system. Simpl. 49, 19 *ἐλεγχθείσης τῆς τοιαύτης ὑποθέσεως τῆς ὅτι τῷ κύκλῳ κινεῖσθαι ἡ ψυχὴ αἰτία τῆς τοῦ οὐρανοῦ κυκλοφορίας*: and (commenting on 407 b 6, 7) 21 *ὡς οἱ κίνησιν τὴν οὐσίαν οἰόμενοι καὶ κατ' οὐσίαν κυκλοφορεῖσθαι βουλόμενοι καὶ οὕτω κινεῖν· μήτε γὰρ κύκλῳ μήτε κινεῖσθαι ὅλως τὴν ψυχήν. τῷ οὖν κινεῖσθαι οὐκ ἔσται αἰτία· οὐ γὰρ καθ' αὐτὴν ἀλλὰ κατὰ συμβεβηκὸς κινεῖται* (sc. *ἡ ψυχή*). Philop. 138, 13 *ὡς δείξας ὅτι ἡ ψυχὴ οὐ κινεῖται καθ' ἑαυτὴν ἀμεγέθης οὖσα καὶ ἀσώματος, ἀλλὰ κατὰ συμβεβηκός, λέγει εἰκότως ὅτι ἄδηλος ἐπὶ τοῖς ὑπ' αὐτῶν λεγομένοις ἡ ποιητικὴ αἰτία τῆς κύκλῳ κινήσεως τοῦ οὐρανοῦ* (cf. 406 a 16 sqq., b 5 sqq.).

b 9 καίτοι γ' ἐχρῆν...11 ἄλλως, i.e. in order to insure consistency with the teleological principle enunciated by the Platonic Timaeus at the outset of his cosmology: *Tim.* 29 E sqq. Cf. especially 30 A *βουληθεὶς γὰρ ὁ θεὸς ἀγαθὰ μὲν πάντα, φλαῦρον δὲ μηδὲν εἶναι κατὰ δύναμιν.* This criticism echoes that passed upon Anaxagoras by Plato in the *Phaedo* (97 D sqq.) and by A. himself, *Metaph.* 985 a 17—21.

b 13. ἐκεῖνο δὲ ἄτοπον συμβαίνει. Objection 8. Plato's theory of soul, says A., like most others, ignores the intimate relation existing between soul and body. This relation A. now takes occasion to explain somewhat in detail: the positive statements of doctrine here implied are specially important as leading up to the theory of soul as the form of body (407 b 23 *εἶδος καὶ μορφή*) laid down in Book II. cc. 1, 2.

b 15 οὐθὲν...16 τοῦ σώματος, i.e. they do not go on to explain the reason why a given soul is found in a given body, or what the bodily conditions are which render the presence of this particular variety of soul possible, e.g. nutritive, sensitive or rational. Them. (23, 25 H., 42, 25 Sp.) adds *καὶ τίνα συγγένειαν κεκτημένου πρὸς αὐτήν* [int. *τοῦ σώματος*].

b 19. τούτων δ' οὐθὲν...τοῖς τυχοῦσιν. Neither the relation expressed by *ποιεῖν* and *πάσχειν* nor that expressed by *κινεῖν* and *κινεῖσθαι* holds of all things indiscriminately. Cf. *De Gen. et Corr.* I. 7, 323 b 29 *ἀλλ' ἐπεὶ οὐ τὸ τυχὸν πέφυκε πάσχειν καὶ ποιεῖν, ἀλλ' ὅσα ἢ ἐναντία ἐστὶν ἢ ἐναντίωσιν ἔχει, ἀνάγκη καὶ τὸ ποιοῦν καὶ τὸ πάσχον τῷ γένει μὲν ὅμοιον εἶναι καὶ ταὐτό, τῷ δ' εἴδει ἀνόμοιον καὶ ἐναντίον.* This conclusion receives further qualification in the course of *De Gen. et Corr.* I., c. 7 in consequence of the double meaning of *τὸ πάσχον* as (1) *τὸ ὑποκείμενον*, (2) *τὸ ἐναντίον*, and again of *τὸ ποιοῦν* as (1) the agent, e.g. the physician, (2) the instrument, e g. wine: 324 a 15—30. Compare further 324 a 30—b 3, where the parallel between *ποίησις* and *κίνησις* is developed, leading to the conclusion that, as *τὸ πρῶτον κινοῦν* is *ἀκίνητον*, so *τὸ πρῶτον ποιοῦν* is *ἀπαθές*: and further 324 b 3—18. By *τὰ τυχόντα* are meant "things which happen to meet one," or, as English idiom prefers, "which we happen to meet": here "things taken at random," which mere chance brings together.

b 20. οἱ δὲ...ἡ ψυχή. Grammatically, the subject understood with *οἱ* is *λόγοι* b 14—15, but the authors of the theories virtually replace the theories themselves. Cf. below b 24 *ὥσπερ εἴ τις φαίη*.

b 20 περὶ δὲ...21 προσδιορίζουσιν. The censure is repeated 414 a 22—25.

b 21 ὥσπερ ἐνδεχόμενον...23 σῶμα. The doctrine of metempsychosis was commonly held by the Pythagoreans. The well-known verses of Xenophanes apud Diog. Laert. VIII. 36 [*frag.* 7 D, 18 K] put the doctrine into the mouth of Pythagoras himself. Herodotus II. 123 states the Egyptian belief in similar terms, *ὡς ἀνθρώπου ψυχὴ ἀθάνατός ἐστι, τοῦ σώματος δὲ καταφθίνοντος ἐς ἄλλο ζῷον αἰεὶ γινόμενον ἐσδύεται*, and among the Greeks, who according to him derived this doctrine from the Egyptians, Herodotus no doubt included Pythagoras. Philop. 140, 5 *μυθώδη φησὶ καὶ οὐκ ἄξια λόγου τὰ ὑπ' αὐτῶν* (int. *τῶν Πυθαγορείων*) *λεγόμενα*, citing Empedocles [*frag.* 117 D, 380 sq. K]. Them., probably on his own conjecture, gives a different turn to *μύθους*: 23, 33 H., 43, 6 sq. Sp. *οἷς ἐκεῖνος μὲν ἐχρῆτο πολιτικῶς, οὗτοι δὲ φυσικῶς* [*ὑπολαμβάνουσι*] *κτέ.*

b 23. δοκεῖ γὰρ ἕκαστον ἴδιον ἔχειν εἶδος καὶ μορφήν. The *γὰρ* must go back to b 19 *τούτων δὲ...τοῖς τυχοῦσιν*. By *ἕκαστον* I understand *σῶμα ἔμψυχον* (the qualification is required by 412 a 16 sq., b 25 sq.), which is the same as *ζῷον*. That which acts upon body is not *τῶν τυχόντων τι*, for there is a proper correlative to *ἕκαστον*, i.e. to each species of animal, and again in any given species (as man) to each individual. This correlative is then introduced as *εἶδος καὶ μορφή*. The *καὶ* is explanatory, both terms being used to express A.'s formal cause. Cf. 412 a 5 sqq., b 10 sqq.

b 25. τὴν τεκτονικήν. Int. *τέχνην*. **ἐνδύεσθαι.** A word not very appropriate to the relation between the art and the instruments which it employs (b 26), e.g. between *αὐλητική* and *αὐλοί*. A. simply takes it over from the Pythagoreans, b 23.

b 25 δεῖ γὰρ...26 τῷ σώματι. The soul is compared to the art or handicraft, the body to the tools or instruments which such an art employs as means to an end (*De Part. An.* I. 5, 645 b 14 *τὸ ὄργανον πᾶν ἕνεκά του*), the end being some work or function: the saw is for sawing, the axe for cutting. If the work is to be performed well or even at all, the tool or instrument must be adapted to its end: *De Part. An.* I. 1, 642 a 9 sqq. The implements special to one craft would be useless to another which has a different work to perform. The carpenter could

not employ flutes in place of his saw and plane. A. applied this analogy unreservedly, as the treatise *De Part. An.* testifies. As the whole body is an instrument, so every part of it is a means to a particular function, *ib.* I. 1, 642 a 11 *ἐπεὶ τὸ σῶμα ὄργανον (ἕνεκά τινος γὰρ ἕκαστον τῶν μορίων, ὁμοίως δὲ καὶ τὸ ὅλον), ἀνάγκη ἄρα τοιονδὶ εἶναι καὶ ἐκ τοιωνδί, εἰ ἐκεῖνο ἔσται.* In order to fulfil its functions the soul needs a body of a given kind which (*De A.* 412 a 28) is termed *ὀργανικόν* (= fitted with organs). The analogy is imperfect (as is acknowledged when A. afterwards illustrates the soul by the axeity of the axe, 412 b 11 sqq.), for the tools are separate from the craftsmen who use them, the possessors of the craft, whereas soul and body combine in a single *ἔμψυχον ζῷον*, and in the animal (nay even in the plant) the body, that is the corporeal part of the compound, is merely an instrument at the disposal of the soul, which is both form and end (415 b 18—20). Neither the whole animal nor any part can be properly defined unless we take account of its function: and this implies that every part, as well as the whole, of the body is instinct with soul (*ἔμψυχον*). *Metaph.* 1035 b 16 *ἕκαστον γοῦν τὸ μέρος ἐὰν ὁρίζηται καλῶς, οὐκ ἄνευ τοῦ ἔργου ὁριεῖται, ὃ οὐχ ὑπάρχει ἄνευ αἰσθήσεως* ...b 23 *οὐδὲ γὰρ εἶναι δύναται χωριζόμενα* [int. *τὰ μόρια τοῦ σώματος*]· *οὐδὲ γὰρ ὁ πάντως ἔχων δάκτυλος ζῴου, ἀλλ' ὁμώνυμος ὁ τεθνεώς.* See also 1036 b 28—32.

CHAPTER IV.

This chapter is mainly devoted to the consideration of two psychological doctrines. The one is that the soul is a harmony (407 b 27—408 a 28). For this part of the chapter the article of Bonitz, *Hermes* VII. pp. 428—36, should be consulted. The other theory is that soul is a self-moving number (408 b 30—409 a 30), the criticism of which runs on into the fifth chapter. The present arrangement of chapters is somewhat disturbing: A. himself clearly indicates a halt at 408 a 29 and again at 409 b 19.

Between the criticisms of these two theories are interposed some valuable remarks, starting from an attempt to limit still further the attribution of motion to the soul (408 a 29—b 29).

Upon the doctrine that soul is a harmony A. does not waste much time: it has already been refuted in Plato's *Phaedo* and his own *Eudemus*. Nevertheless of all the pre-Platonic speculations it is the one which approaches most nearly to his own formula that soul is form (*εἶδος*, i.e. *πρώτη ἐντελέχεια*) of a natural body capable of life. How nearly the two approximate may be seen from the fact that A. uses the same terms, viz., *λόγος* and *σύνθεσις*, to explain his own formal cause and this harmony or mixture of contrary elements put forth by his predecessors. For *σύνθεσις*, see *Phys.* II. 3, 195 a 20 *τὰ δὲ* [int. *αἴτια* or *γένη τῶν αἰτίων*] *ὡς τὸ τί ἦν εἶναι, τό τε ὅλον καὶ ἡ σύνθεσις καὶ τὸ εἶδος*: and for *λόγος* = *εἶδος* *De A.* 403 b 2, *note.* Hence it needs special care to discriminate a doctrine which seems at first sight to bear more than a superficial resemblance to his own, especially as the examination of it ends with a virtual admission (408 a 24—28) that to reject it altogether leaves us confronted with formidable difficulties. Cf. Alex. Aphr. *De Anima* 26, 22 *καθ' οὓς μὲν γὰρ αὐτὰ τὰ συγκείμενά πως ἐστιν ἡ ψυχή* [the Stoics and Epicurus], *κατὰ τούτους παρὰ τῆς ποιᾶς συνθέσεως τὸ ψυχῇ εἶναι τῷ συγκειμένῳ. ἥτις σύνθεσις εἰ ἔστιν ἁρμονία, παρὰ τῆς ἁρμονίας ἂν τὸ ψυχῇ εἶναι ἔχοι τὸ συγκείμενον. καθ' ὃν δέ ἐστιν ἡ ψυχὴ οὐχ ἁπλῶς τὰ συγκείμενα, ἀλλ' ἐπὶ τῇ ποιᾷ τῶν πρώτων σωμάτων κράσει τε καὶ μίξει δύναμις γεννωμένη, ἡ μὲν κρᾶσις ὕλης ἕξει λόγον κτέ.*

It is obvious that A. is pursuing the same method as in his earlier criticisms (see p. 240 *supra*). When criticising the theory of Xenocrates that soul is a self-moving number, he assumes his own doctrine of κίνησις as laid down in the *Physics*, and by its aid deduces consequences from the thesis under examination, which are either impossible or inconsistent. Cf. Simpl. 62, 11 ὁ δὲ Ἀριστοτέλης ἀριθμόν τε τὸ μεριστὸν ἀκούων πλῆθος καὶ κίνησιν τὴν κατὰ συνέχειαν προϊοῦσαν, ἀναγκαίως ἄμφω τῆς ψυχῆς ἀποφάσκει. Similarly in the discussion of harmony he assumes his own doctrine of the relation of compound bodies, σύνθετα, to the elements or simple bodies, στοιχεῖα, ἁπλᾶ σώματα, out of which they are compounded; a doctrine laid down in *De Gen. et Corr.* I., c. 10 and elsewhere. He distinguishes in the main two modes of composition (1) θέσις, σύνθεσις, παράθεσις, in which particles of the constituents are found side by side in the compound with their nature unchanged, as when sand is mixed with sugar. The particles may be so fine as to elude the senses and the compound may present to sense an uniformity and homogeneity which does not really belong to it. The case is different with (2) μεῖξις or κρᾶσις, in which the constituents are mingled and blended, so that some or all of them have undergone a change in the process of mixing, *De Gen. et Corr.* I. 10, 328 b 22 ἡ δὲ μίξις τῶν μικτῶν ἀλλοιωθέντων ἕνωσις. The qualities of the compound are often different from those presented by the original constituents and, when complete or total mixture has been effected, they belong to every minutest particle of the new compound, which is thus ὁμοιομερές; whereas, when sand and sugar are mixed, every separate particle of the sand and of the sugar retains its original qualities. Probably the term κρᾶσις should strictly be confined to the case where all the components are liquids. The simplest case of μεῖξις proper is found when a solid, salt or sugar, is dissolved in a liquid. But, if the fusion of metals be μεῖξις, it is clear that bodies ordinarily accounted solid can be constituents of such a mixture. This, however, is an accommodation to popular language and notions: the primary components of every mixture are the simple bodies (fire, air, earth, water), or rather the primary qualities hot, cold, moist, dry. In our world μεικτὰ properly so called, especially the constituents of animal bodies (411 a 10: cf. 429 b 15 sq.), are compounds into which all these four primary qualities enter; they have been well called "quaternary compounds." This fact (as A. assumed it to be) facilitates their definition: we have only to determine the proportions in which the simple bodies or the primary qualities combine, and we have to our hand a formula which defines with quantitative exactness the nature of the compound (see *note* on 408 a 14). Such a formula is λόγος τῆς μείξεως, λόγος meaning ratio or combining proportion. Even συμφωνία, a consonance or chord of two or more sounds, can be similarly determined by a quantitative formula (426 a 28 sq.). It will thus be seen that the true mixture is μεῖξις or κρᾶσις: in σύνθεσις we have something which simulates mixture, and how loosely the term can be used is evident from 408 a 5 sqq. It would almost seem as if any arrangement of parts, which preserve their identity when combined in a natural or artificial whole, could be called σύνθεσις, as we speak of a synthesis of parts. Hence σύνθεσις never results in a really uniform or homogeneous compound, by which is meant one, every minutest particle of which has the essential qualities which characterise the whole compound, in the sense in which every particle of flesh and bone is homogeneous with every other particle and with the whole, or every particle of water in which salt or sugar has been thoroughly dissolved is salt or sweet. See further Alex. Aphr. περὶ κράσεως καὶ αὐξήσεως (*Scripta Minora*, II. p. 213 sqq., ed. Bruns), Zabarella, *De Mistione* (pp. 451—480 in the Frankfort reprint of 1617 under the title *De Rebus Naturalibus Libri XXX.*), and Mr H. H. Joachim in *Journal of Phil.* XXIX., p. 72 sqq.

407 b 27. πιθανὴ μὲν πολλοῖς, as e.g. to Simmias in the *Phaedo*, where, renouncing the doctrine, he says (92 C) *ὅδε μὲν γάρ μοι γέγονεν* (sc. *ὁ λόγος*) *ἄνευ ἀποδείξεως μετὰ εἰκότος τινὸς καὶ εὐπρεπείας, ὅθεν καὶ τοῖς πολλοῖς δοκεῖ ἀνθρώποις.* Cf. 407 b 5 *πολλοῖς συνδοκεῖ.*

b 28. [λόγους δ']...<δὲ> δεδωκυῖα. I have adopted with some misgiving the conjecture of Bernays, who has submitted the passage to a searching examination, *Die Dialoge des Arist.*, p. 14 sqq. As he points out, there is no variation in the stereotyped phrase *λόγον* (not *λόγους*) *διδόναι* to render an account, and if *εὐθύνας* be substituted for *λόγου* we obtain a phrase technically applicable to the magistrate submitting his accounts to audit, but so nearly equivalent in meaning that there is no place for the apologetic *ὥσπερ*. Besides, the antithesis to *πιθανὴ μὲν...λεγομένων* certainly demands that the clause with *δὲ* should intimate an unfavourable reception of the theory, which is not implied in *λόγον διδόναι*, but often attaches to *εὐθύνας* (as to the more general *δίκας*) *διδόναι*. Cf. Aristoph. *Pax* 1187 *ὧν ἔτ' εὐθύνας ἐμοὶ δώσουσιν*, Ar. *Rhet.* 1411 b 19 *καὶ αἱ πόλεις τῷ ψόγῳ τῶν ἀνθρώπων μεγάλας εὐθύνας διδόασιν*, "pay a heavy reckoning" [or a grievous penalty] to (or by) the censure of mankind. See Cope *ad loc.* Vol. III., p. 124. A. himself appends to this citation of his unknown authority a remark of his own, viz., *ἡ γὰρ εὔθυνα βλάβη τις δικαία ἐστίν*, which leaves no doubt as to the sense of *εὐθύνας* either in the *Rhetoric* or here in the *De A*. The very same metaphor, even to the personification of the *λόγοι* in the dative, is repeated, Bernays thinks, in the passage before us. In conjunction with such a metaphor *λόγον διδόναι* would be just as much out of place as the unidiomatic *λόγους διδόναι*. The only defence I have seen suggested for the latter is that of Wallace: "the grammatical perversity of the plural may be explained as attracted into the number of the following word." A copyist with *λόγον* before him might thus assimilate it to *εὐθύνας*, but this is no reason why A. should have done so. An editor convinced of the strength of the case which Bernays presents may still hesitate between his solution and that of Bergk (*Hermes* XVIII. 518) *λόγον δ' ὥσπερ καὶ εὐθύνας δ.* This setting of the phrase has the advantage that the metaphor dispenses with *ὥσπερ* precisely as it does in the *Rhetoric l.c.*, while *ὥσπερ καὶ* expresses very naturally that not only has the theory been put on its trial, but also that, instead of being acquitted, it has been condemned. If, on the other hand, we suppose *λόγους* to be a gloss on *εὐθύνας* it is a little curious that in the sixth century such a gloss should have been current and have been read by Philoponus (145, 19 sq.). Them., however, gives no hint of having read *λόγους*: (24, 14 H., 44, 4 Sp.) *δεδωκυῖα δὲ εὐθύνας καὶ ἐξητασμένη καὶ ἐν τοῖς κοινοῖς λόγοις καὶ ἐν τοῖς ἰδίοις.* The last four words show how he took the *καὶ* before *τοῖς ἐν κοινῷ*.

b 29. τοῖς ἐν κοινῷ γινομένοις λόγοις. The dative denotes the court of auditors to whom the account is rendered (cf. *Theaet.* 183 D *ὅπως τῶν ἐπιλοίπων Σωκράτει δώσεις λόγον*): the court in this case being "discussions which go on in public," i.e. the dialectical debates of the time, the game so popular in Athens in the 4th century, for which A. has laid down rules in his *Topica*. The *Phaedo* and the *Eudemus*, which must be taken to be included in the reference, merely profess to report such conversations going on in public.

407 b 32—408 a 28. Here begins A.'s criticism of the theory. Harmony (*ἁρμονία*) may mean two totally different things:—

(*a*) the *proportion* (*λόγος*) in which ingredients are blended,

(*b*) the *combination* (*σύνθεσις*) or exact adjustment of different parts.

(1) Soul cannot possibly be either.

(2) Nor can harmony account for the motive power of soul.

(3) Harmony is a more appropriate expression for health or some other corporeal excellence, than for soul.

(4) It is futile to attempt to derive from this definition the active or passive functions of soul. They cannot be adjusted to a harmony of any kind.

(5) Of the two meanings of harmony the one, viz., exact adjustment of different parts, can be easily refuted. If we define the soul by harmony in that sense, we cannot point to any harmony of bodily parts which must be either intellect or sensation or appetition; while, if we take the other meaning, the combining ratio of bodily parts, we find many such and there will be a plurality of souls all over the body [§§ 1—6]. This suggests difficulties in the theory of Empedocles. We are tempted to ask what is the relation of his combining proportion to the soul and to Love, the cause which in his system brings things together [§ 7].

But, although these objections may be urged against the view that soul is a harmony of opposites, yet at the same time the rejection of this view has difficulties of its own. If the soul has nothing to do with the combining ratio of the bodily parts, (1) why should the destruction of the flesh and other bodily parts involve the simultaneous destruction of the soul, and (2) what is it that perishes when the soul leaves the body [§ 8]?

b 32 ἡ μὲν ἁρμονία...33 ἡ σύνθεσις. This is given more fully below, 408 a 5—9 *εἰ λέγομεν...λόγον*, where the meaning *σύνθεσις* more naturally precedes that of *τῶν μειχθέντων λόγος*. By *λόγος* must be understood "ratio" or "proportion," *Ind. Ar.* 437 a 40, viz. the ratio which expresses the relation to each other of component parts. If certain elements go to form a compound or mixture, the character of the mixture will vary with the proportion in which they are compounded. Cf. 416 a 17, 426 a 28, b 3, 7, 429 b 16. A modern chemical formula is just such a *λόγος*. Cf. 410 a 1—6, and the passages cited in the notes *ad loc.*, *Metaph.* 993 a 15—22, *De Part. An.* I. 1, 642 a 18—28, *De Gen. An.* I. 2, 734 b 28—735 a 4. It is not always easy to determine when *λόγος*, standing alone without *τῆς μείξεως*, has the meaning of ratio or proportion and when it has the meaning of form (403 b 2). In 424 a 31, e.g., the word has been variously taken.

b 33. τὴν δὲ ψυχὴν οὐδέτερον οἷόν τ' εἶναι τούτων. Though no reason is given, we are probably justified in assuming with Them. and Philop. that it is because soul is a substance (*οὐσία*): and neither a mathematical ratio nor a combination of parts can be this *οὐσία*: Them. 24, 32 H., 45, 2 Sp., Philop. 146, 23—26. The objection taken below (408 a 11—18) is that from both meanings of harmony the result would be a plurality of souls instead of a single soul.

b 34 ψυχῇ δὲ...408 a 1 ὡς εἰπεῖν. Join *μάλιστα* with *τοῦτο = τὸ κινεῖν*, "der Seele dagegen wird dies allgemein als bestimmteste Bezeichnung ihres Wesens (*μάλιστα*) zugeschrieben" (Bz). *τοῦτο* (i.e. *τὸ κινεῖν*) *μάλιστα τῇ ψυχῇ ἀπονέμειν* = to define the soul as *τὸ κινοῦν*, to make motivity its most essential attribute. Cf. 403 b 29. Here *ὡς εἰπεῖν* goes with *πάντες*. Cf. 405 b 11.

408 a 1 ἁρμόζει δὲ μᾶλλον....2 ἁρμονίαν. This is one of two objections, which, as we learn from Philop. (144, 22 sqq. and 147, 8—10), A. urged in his dialogue *Eudemus*. Disease, the opposite of health, A. there maintains, is one manifestation along with weakness and ugliness of *ἀναρμοστία τοῦ ἐμψύχου σώματος*: more precisely it is *ἀσυμμετρία τῶν στοιχείων* (*frag.* 41, 1482 a 6 sqq., Philop. 144, 30 sqq.). Health is said to be *εὐκρασία τοῦ σώματος* *De Part. An.* III. 12, 673 b 26 and in *Top.* VI. 2, 139 b 20 sq. it is defined as *συμμετρία θερμῶν καὶ ψυχρῶν*. Cf. *Top.* VI. 6, 145 b 8; also *Metaph.* 1032 b 6—28, a passage

which implies that uniformity of temperature is part of health. On the close connexion between early medicine and early physical speculation, attested by *De Sensu*, I. 1, 436 a 17—b 1 (cf. *De Resp.* 27 (21), 480 b 22—30), see Gomperz, *Greek Thinkers*, Book III., c. 1, *Eng. Tr.*, p. 275 sqq.

a 2 καὶ ὅλως....3 ἡ κατὰ ψυχῆς, e.g. strength and beauty. But, as A. remarked in the *Eudemus*, Thersites, ugly as he was, nevertheless had a soul (Philop. 144, 30—145, 6).

a 3. ἀποδιδόναι...5 ἁρμονίᾳ τινί. The terms, *τὰ πάθη καὶ τὰ ἔργα*, are conjoined in 409 b 5, see *notes* on 403 a 6, 402 a 8. They denote the functions of soul generally, some of which, *νόησις, αἴσθησις* and *ὄρεξις*, are specified below a 12 sq. Ἀποδιδόναι, to assign them as ἴδια or essential properties. Cf. 405 a 17, 402 b 23 and, for the construction, *De Sensu* 2, 438 b 18 *ἀποδιδόναι καὶ προσάπτειν ἕκαστον τῶν αἰσθητηρίων ἑνὶ τῶν στοιχείων.*

a 5. χαλεπὸν γὰρ ἐφαρμόζειν. The verb is chosen for the etymological connexion with *ἁρμονία*. It means to fit or adjust facts to a theory, e.g. *Metaph.* 986 a 6. Cf. also *Anal. Post.* I. 7, 75 b 4 *οὐκ ἔστι τὴν ἀριθμητικὴν ἀπόδειξιν ἐφαρμόσαι ἐπὶ τὰ τοῖς μεγέθεσι συμβεβηκότα.*

a 5 ἔτι δ' εἰ λέγομεν....18 ἁρμονία καὶ ψυχή. Bonitz *loc. cit.* pointed out that, although this argument is introduced by *ἔτι δὲ* as if it were something new, it presents in an expanded form the first of the four arguments so briefly stated above, viz. 407 b 32—4 *καίτοι...τούτων*. The same two meanings of *ἁρμονία* are proposed and the same conclusion enforced *οὐδετέρως μὲν οὖν εὔλογον* (a 9 sq.), the difference being that reasons are now given for this conclusion (a 10—18). We may say that 407 b 32—4 sketches the course of an argument and 408 a 5—18 presents the same argument amplified and worked out in detail. Most readers will agree that no sane author would present the two passages as separate co-ordinated proofs. Further, Bonitz pointed out the insuperable objections to any critical remedy. We cannot transpose the latter passage to follow 407 b 34 because of the remarks upon Empedocles (408 a 18—23), which grow out of it: while the excision either of (407 b 32—4) or of (408 a 5—18) would leave a manifest lacuna. There is nothing to suggest that the two passages are not by A. The fault must lie in the editing.

a 5 εἰ λέγομεν....6 ἀποβλέποντες, if we use the term with two meanings in view. This implies that we do so use it. *εἰ* is almost *εἴπερ*. This is one of many instances where the participle conveys the more important part of the predication. The apodosis *οὐδετέρως εὔλογον* is out of all relation to *λέγομεν*, "we use the term," and the connexion of the two clauses has perplexed everyone. It seems to me to be simply this: "if we look at the two senses of the term, we find that neither is applicable to the soul." Cf. *infr.* 408 b 1 *εἰς τὰ τοιαῦτα ἀποβλέψας*, and for the metaphorical sense of *ἀποβλέποντες* 404 b 7, *Metaph.* 986 b 24, and *βλέψαντες De Caelo* III. 8, 306 b 31.

a 6. εἰς δύο ἀποβλέποντες = *διχῶς*, which Philop. rightly substitutes 148, 7: i.e. *εἰς* does not govern a 7 *σύνθεσιν* or a 9 *λόγον* as we might at first sight suppose; they are governed by *λέγομεν*.

a 6 κυριώτατα μὲν....9 ἐντεῦθεν δέ. A. is aware of the etymological connexion of *ἁρμονία* with *ἁρμόζειν* and emphasises its earlier meaning, which is attested by the usage of Homer (e.g. *Od.* V. 248, 361) and Herodotus (II. 96): viz., the close fit or adjustment of component parts. He decides that from this is derived the other meaning "ratio" or mathematical proportion between component parts. For *κυριώτατα* cf. 418 a 2 sq., 418 a 24, 412 b 9 *τὸ κυρίως*, int. *λεγόμενον.*

a 6 τῶν μεγεθῶν...7 τὴν σύνθεσιν αὐτῶν. The addition of *αὐτῶν* = *τῶν*

μεγεθῶν is superfluous; it is as if a relative clause had preceded, e.g. ὅσα τῶν μεγεθῶν ἔχει κίνησιν καὶ θέσιν. Cf. 414 a 29 sq. τοῖς δὲ τινὲς αὐτῶν, although τῶν δυνάμεων has preceded. I take τῶν μεγεθῶν as partitive gen. and ἐν = in the case of. Philop. 148, 7 λέγομεν γὰρ τὴν ἁρμονίαν, φησί, διχῶς· καὶ κατὰ πρῶτον μὲν λόγον τὴν σύνθεσιν τῶν σωμάτων, ὅταν κ.τ.λ., Them. (25, 1 H., 45, 10 Sp.) more freely ἐλήλυθε δὲ αὕτη ἡ δόξα μάλιστα μὲν ἐκ τῶν μεγεθῶν, ὅσα ἔχει θέσιν καὶ κίνησιν, ἐπειδὴ ταῦτα, ὅταν οὕτως ἀλλήλοις παρατεθῇ ὥστε μηδὲν συγγενὲς παραδέχεσθαι, τότε λέγεται ἡρμόσθαι καλῶς, καὶ ἡ σύνθεσις αὐτῶν ὀνομάζεται ἁρμονία. Bonitz (l.c.) "The word ἁρμονία is used by us in two different ways; when used of things corporeally extended and situated in space it means that continuity of connexion which excludes the reception or interpolation of what is cognate."

If τῶν μεγεθῶν is partitive, it is implied that there are μεγέθη which are without κίνησις and θέσις, i.e. τὰ μαθηματικά. See the excellent note by Philop. 148, 18—24. For θέσις cf. *Phys.* IV. 1, 208 b 22 δηλοῖ δὲ καὶ τὰ μαθηματικά· οὐκ ὄντα γὰρ ἐν τόπῳ ὅμως κατὰ τὴν θέσιν πρὸς ἡμᾶς ἔχει δεξιὰ καὶ ἀριστερά, ὥστε μόνον αὐτῶν νοεῖσθαι τὴν θέσιν, ἀλλὰ μὴ ἔχειν φύσιν τούτων ἕκαστον, i.e. we think them as having position in space, though in reality they have not.

a 7 ἐπειδὰν....8 παραδέχεσθαι. Here συναρμόζωσιν is intransitive and plural with a neuter plural subject. In order to form components of a larger whole, magnitudes must be brought into some sort of connexion. If they are not continuous nor in contact, they must at least be arranged in a determinate succession. Magnitudes may be (1) continuous, συνεχῆ, when their extremities coincide and they are really parts of the same magnitude or (2) merely in contact, ἁπτόμενα, like the bricks in a house or the grains in a heap of sand or the sticks in a bundle. There is a third case in which the magnitudes are even more loosely connected, viz. by being arranged in a definite succession one after the other, so as to form a series or pattern. Thus we may build a row of detached houses or plant trees in parallel lines to form an avenue, or in a pattern like a quincunx. The symmetry of the avenue or the pattern or the row of houses would not be affected by the intrusion between the component magnitudes of other objects, such as trees or gardens in the case of the houses, provided no unit of the series itself were interpolated. Cf. *Phys.* VI. 1, 231 a 22 συνεχῆ μὲν ὧν τὰ ἔσχατα ἕν, ἁπτόμενα δ' ὧν ἅμα, ἐφεξῆς δ' ὧν μηδὲν μεταξὺ συγγενὲς and Simpl. *ad loc.* 925, 25 sqq., 926, 24 sqq., 927, 11—13, 928, 11—13. A. extends the meaning of σύνθεσις so as to include τὰ ἐφεξῆς, and *a fortiori* τὰ ἁπτόμενα and τὰ συνεχῆ. Philop. 148, 8 sqq. ὅταν οὕτω παρατεθῇ, ὡς μηδὲν συγγενὲς αὐτῶν σῶμα δύνασθαι μεταξὺ ἐμβληθῆναι, οἷον ὅταν οὕτως ἀκριβῶς συντεθῶσιν οἱ λίθοι ἐξ ὧν ἡ οἰκία, ὡς μὴ δύνασθαι ἄλλον ἐμβληθῆναι μεταξὺ λίθον ἢ ξύλον ἤ τι τῶν συγγενῶν καὶ βαρέων σωμάτων, ἡρμόσθαι λέγομεν τοὺς λίθους, καὶ ἁρμονίαν τὴν τούτων σύνθεσιν. Cf. the passage of Them. cited in the last note. Alex. Aphr. goes into further details *De An.* 25, 15 ἐπὶ τῆς πρώτης ἁρμονίας [int. τῆς ἐπὶ τῆς τῶν σωμάτων συνθέσεως λεγομένης] οὐ ταὐτὸν ἡ ἁρμονία καὶ τὸ γινόμενον ἐκ τῶν ἡρμοσμένων. οὐ γὰρ ἐπεὶ καθ' ἁρμονίαν παράκειται τὰ ξύλα ἀλλήλοις τὰ ἐν τῷ βάθρῳ, διὰ τοῦτο τὸ βάθρον ἁρμονία. οὐδ' ἐπεὶ οἱ λίθοι εἰσὶν καθ' ἁρμονίαν συγκείμενοι, ἤδη καὶ ὁ νεὼς ἁρμονία ὁ ἐκ τῆς τούτων γεγονὼς ἁρμονίας. The best example of τὸ ἐφεξῆς is furnished, not by magnitudes, but by the series of numbers, where interpolation of συγγενές τι is impossible; e.g., $4\frac{1}{2}$, if inserted between the integers 4 and 5, is not really συγγενές: cf. *Metaph.* 1085 a 3 ἁφὴ οὐκ ἔστιν ἐν τοῖς ἀριθμοῖς, τὸ δ' ἐφεξῆς.

a 9. ἐντεῦθεν δὲ καὶ τὸν τῶν μεμιγμένων λόγον, int. λέγομεν τὴν ἁρμονίαν (a 5). Philop. 148, 14 ἐκ δὲ τούτων, φησί, μεταφέρομεν τὸ τῆς ἁρμονίας ὄνομα καὶ ἐπὶ τὸν λόγον τῶν μεμιγμένων, οἷον ἔν τε τοῖς κεκραμένοις καὶ ἐν τοῖς κατὰ μουσικήν. See

above on 407 b 32. A. is of opinion that the meaning "ratio of component parts" is secondary and of later development, but for the theory it is certainly the more important of the two.

a 9. οὐδετέρως μὲν οὖν εὔλογον, int. ἐστι τὴν ψυχὴν ἁρμονίαν τινὰ εἶναι (407 b 30).

a 10. εὐεξέταστος, practically equivalent to εὐέλεγκτος as Philop. interprets it, 148, 32: i.e. the theory which defines soul as ἁρμονία in the sense of σύνθεσις is easy to refute.

a 11. πολλαί τε γάρ...πολλαχῶς, ἔχουσαι or συγκείμεναι may be understood with πολλαχῶς; Philop. 149, 14 πολλαὶ μὲν ἐπειδὴ καὶ πολλὰ τὰ μέλη, πολλαχῶς δὲ ἐπειδὴ ἄλλο ἄλλως τὴν τῶν ὁμοιομερῶν σύνθεσιν ἔχει. From A.'s own standpoint the all-important distinction in the parts of animal bodies is that between τὰ ὁμοιομερῆ and τὰ ἀνομοιομερῆ: *De Part. An.* II. 1, 647 a 1 τὰ μὲν ἁπλᾶ καὶ ὁμοιομερῆ, τὰ δὲ σύνθετα καὶ ἀνομοιομερῆ τῶν μορίων ἐν τοῖς ζῴοις ἐστίν. See generally the classification of these συνθέσεις in *De Part. An.* II. c. 1, where A. starts (646 a 12) τριῶν δ' οὐσῶν τῶν συνθέσεων, viz. of the parts ἐξ ὧν συνέστηκεν ἕκαστον τῶν ζῴων, and goes on to explain that these three are (1) ἡ ἐκ τῶν καλουμένων στοιχείων (or rather the elemental qualities, hot, cold, dry, moist, etc.), (2) ἡ τῶν ὁμοιομερῶν φύσις (a 20), (3) ἡ τῶν ἀνομοιομερῶν (a 23): 646 b 10 ἐξ ἀμφοτέρων μὲν οὖν τὰ ζῷα συνέστηκε τῶν μορίων τούτων, ἀλλὰ τὰ ὁμοιομερῆ τῶν ἀνομοιομερῶν ἕνεκέν ἐστιν. The former, ὁμοιομερῆ, include bone, flesh, blood and the like, or roughly what modern physiologists describe as tissues (646 a 20 sqq.), the latter (ἀνομοιομερῆ or ὀργανικὰ μόρια 647 a 3) include face, hand, foot, etc., and especially the sense-organs (αἰσθητήρια), structures which have their several functions in the animal economy as wholes, but are incapable of resolution into parts subserving the same functions.

a 12. τίνος οὖν...σύνθεσιν εἶναι. The soul has been defined as ἁρμονία = σύνθεσις. A. argues that what is true of the whole soul must be true of the parts of soul, the principle which he afterwards applies more explicitly as a critic, 411 b 15 sqq., and to his own definition, 412 b 22—25. Cf. *Metaph.* 1034 b 20—24 and the general discussion in Z., c. 10. But there are many and various συνθέσεις in the animal body. If the unity of soul is to be maintained, these various συνθέσεις must be equated to the various parts or faculties of soul. A. selects three of the faculties recognised by himself and challenges his opponents to state what are the bodily parts of which these faculties are respectively συνθέσεις. Them. (25, 13 H., 45, 27 Sp.) γελοῖον γὰρ τοιούτων μορίων [e.g. ὀστῶν, νεύρων] ἢ τὸν νοῦν ἢ τὴν αἴσθησιν σύνθεσιν λέγειν. There is a similar argument in 411 b 14—19, where it is assumed that if soul is defined as that which holds the body together it will follow that each faculty of soul will hold a part of the body together. The objection here would be all the greater for νοῦς, because according to A. it has no bodily organ (429 a 26 sq.).

a 14 οὐ γὰρ τὸν αὐτὸν....15 καθ' ἣν ὀστοῦν, int. ἐστὶν or συνέστηκεν. In the *De Part. An.* A. adopts the view tentatively put forward by Empedocles that the tissues (ὁμοιομερῆ) are certain specific combinations of the four elements. Hence, as Bonitz remarks (l.c.), the words ἡ μεῖξις...ὀστοῦν might have been found unaltered in an exposition of the view of Empedocles. Cf. *De Part. An.* I. 1, 642 a 18—25 ἐνιαχοῦ δέ που αὐτῇ [the formal cause] καὶ Ἐμπεδοκλῆς περιπίπτει, ἀγόμενος ὑπ' αὐτῆς τῆς ἀληθείας, καὶ τὴν οὐσίαν καὶ τὴν φύσιν ἀναγκάζεται φάναι τὸν λόγον εἶναι, οἷον ὀστοῦν ἀποδιδοὺς τί ἐστιν· οὔτε γὰρ ἕν τι τῶν στοιχείων λέγει αὐτὸ οὔτε δύο ἢ τρία οὔτε πάντα, ἀλλὰ λόγον τῆς μίξεως αὐτῶν. δῆλον τοίνυν ὅτι καὶ ἡ σὰρξ τὸν αὐτὸν τρόπον ἐστί, καὶ τῶν ἄλλων τῶν τοιούτων μορίων ἕκαστον. Also *Metaph.* A., c. 10 and for A.'s own view 429 b 16, *De Gen. An.* II. 734 b 31 σκληρὰ μὲν οὖν καὶ μαλακὰ καὶ γλίσχρα καὶ κραῦρα, καὶ ὅσα ἄλλα πάθη ὑπάρχει τοῖς

ἐμψύχοις μορίοις, θερμότης καὶ ψυχρότης ποιήσειεν ἄν, τὸν δὲ λόγον ᾧ ἤδη τὸ μὲν σὰρξ τὸ δ' ὀστοῦν, οὐκέτι. 'So many degrees of "hot" and so many degrees of "cold," combined with so many degrees of "moist" and so many degrees of "dry," produce *Flesh*: whilst less or more degrees of "hot" and "cold," combining with less or more degrees of "moist" and "dry," produce *Bone* or *Gold*' (H. H. Joachim, *Journal of Phil.* XXIX., p. 76).

a 16. συμβήσεται οὖν...κατὰ πᾶν τὸ σῶμα. From ψυχὰς must be supplied τὸ ἔμψυχον as the subject to ἔχειν (or perhaps τὸ ζῷον). This is not very different from supplying ὁ ἄνθρωπος or ὁ ὀργιζόμενος out of ὀργίζηται 403 a 22.

a 17. εἴπερ πάντα μὲν ἐκ τῶν στοιχείων μεμειγμένων. With πάντα supply τὰ σωματικὰ μέρη. It is admitted that all the ὁμοιομερῆ are thus constructed (see above) and the ἀνομοιομερῆ, i.e. the various organs, are built up out of the ὁμοιομερῆ (*De Gen. An.* I. 1, 715 a 10). The first condition of a true μεῖξις as laid down in *De Gen. et Corr.* I. 10, 328 a 9 sqq., is that the ingredients must be ὁμοιομερῆ: the whole must be like any and every part, ἕξει τὸν αὐτὸν λόγον τῷ ὅλῳ τὸ μόριον, as each drop of water is truly water.

a 18. καί, explicative.

a 19. παρ' Ἐμπεδοκλέους. The examination of ὁ λόγος τῆς μείξεως as an interpretation of the harmony by which soul is defined has brought us in contact with a well-known tenet of Empedocles, who regarded the peculiar nature of those bodies which A. calls ὁμοιομερῆ as determined by the different proportions of his four elements (410 a 2 sqq.). Apparently he had not explained in what relation this proportion stood to soul as the vital principle. Hence A. takes occasion parenthetically to address three enquiries or dilemmas to Empedocles:—(1) How is the λόγος τῆς μείξεως related to ψυχή? Are they, or are they not, identical? (2) Does φιλία, the combining force of the system, produce any and every mixture of elements, or only the appropriate one? (3) Is φιλία itself identical with the λόγος τῆς μείξεως or not? The inconsistencies which must result, whatever answers be given, are left undeveloped.

a 19. ἕκαστον γὰρ αὐτῶν. Comparing πάντα μὲν ἐκ τῶν στοιχείων μεμειγμένων (408 a 17) and (15) ἡ μεῖξις καθ' ἣν σὰρξ καὶ καθ' ἣν ὀστοῦν, we conclude that the meaning of αὐτῶν is "those bodily parts" called by A. ὁμοιομερῆ, which Empedocles as well as A. supposed to be combinations of the four elements in fixed proportions. Empedocles certainly so regarded bone, and, if bone, A. argues *De Part. An.* I. 1, 642 a 22—24, so also in strict consistency flesh and the rest. **λόγῳ τινί φησιν εἶναι.** Cf. 410 a 1 οὐ γὰρ ὁπωσοῦν ἔχοντα τὰ στοιχεῖα τούτων ἕκαστον [man, god, flesh, bone as examples of τὸ σύνολον], ἀλλὰ λόγῳ τινὶ καὶ συνθέσει.

a 20. ἢ μᾶλλον ἑτερόν τι οὖσα. The subject is ἡ ψυχή, and the gender of ἑτερόν τι which is predicative is not assimilated, so that this case is analogous to 403 b 29 and not to 404 a 26.

a 21. ἐγγίνεται τοῖς μέλεσιν; "or does the soul supervene in the members, being something distinct from the ratio?" The verb ἐγγίνεσθαι recurs 408 b 18, 414 a 27, 426 a 5, being in all three passages applied to form becoming immanent in this or that matter.

a 21 ἡ φιλία...22 μείξεως. Attraction personified as Love is in Empedocles' system the moving or combining cause which brings the four elements together to form particular things, just as Repulsion or Strife (νεῖκος) is the cause of segregation, dissolving concrete things into their elements *Metaph.* 985 a 21—31, 988 a 33 sq. Such unity as particular things have is brought about by this force, φιλία: *Metaph.* 1001 a 14 δόξειε γὰρ ἂν λέγειν τοῦτο [int. τὸ ἕν] τὴν φιλίαν εἶναι· αἰτία γοῦν ἐστὶν αὕτη τοῦ ἓν εἶναι πᾶσιν. Ultimately it will unite all things in the

σφαῖρος. On τῆς τυχούσης=fortuitous, see on 407 b 19: it means any and every mixture, die erste beste Mischung. Every mixture implies a ratio of some sort between its components. Alex. *De Anima* 26, 3—13, Simpl. 56, 5—7.

a 22. ἢ τῆς κατὰ τὸν λόγον, that mixture which is determined by the ratio: κατὰ=according to. Cf. 408 a 15. **καὶ αὕτη**, i.e. ἡ φιλία. With ὁ λόγος supply τῆς μείξεως.

a 24. ταῦτα μὲν οὖν ἔχει τοιαύτας ἀπορίας. Bonitz has shown (*loc. cit.*) the impossibility of supposing that these words dismiss the parenthetical difficulties raised for Empedocles in 408 a 18—23, and has proved that Torstrik was mistaken in supposing the next passage 408 a 24—28 to continue a discussion on the same lines. Bonitz rightly perceived that the clause before us passes over the parenthetical remarks à propos of Empedocles, and sums up all the objections urged against ἁρμονία, whichever interpretation we give the term, i.e. it sums up the results of the whole passage from 407 b 32 to 408 a 18 (including the ill-coordinated 5th argument 408 a 5—18 καὶ ψυχή). This can be seen from the character of the arguments upon which we are entering 408 a 24—28. We dismiss the arguments *contra* and consider what is the consequence of rejecting the theory that soul is harmony of some sort. The theory cannot be adopted, but to reject it lands us in fresh difficulties, as A. points out. Thus the whole criticism tends to pass into a discussion of antinomies similar to those which fill *Metaph.* B., where arguments *pro* and *contra* are impartially stated and no decision is given *ex cathedra*.

a 24. εἰ δ' ἐστὶν ἕτερον ἡ ψυχὴ τῆς μείξεως. These words bear a superficial resemblance to 408 a 20 sq. πότερον...μέλεσιν, and it might be thought that A. is still dealing with Empedocles and developing the negative side of that enquiry, but, as the text stands, this is impossible, since εἰ δὲ answers ταῦτα μὲν and the clause which the latter words introduce ταῦτα μὲν...ἀπορίας must be of a general character and cannot without violence be interpreted as restating merely the first of the three enquiries addressed to Empedocles. On the other hand the words may very well mean "If we reject the definition which makes the soul a harmony." This could have been expressed more directly εἰ δ' ἐστὶν ἕτερον ἡ ψυχὴ τῆς ἁρμονίας. But that τῆς μείξεως should replace τῆς ἁρμονίας is not strange. A.'s objections aim at reducing ἁρμονία, if interpreted in one way directly, if in another indirectly, to μεῖξις (or κρᾶσις or σύνθεσις). Given the μεμειγμένα or σύνθετα, the theory of harmony requires nothing more. The soul, it asserts, is either the arrangement of these materials or the ratio in which they combine, arrangement and ratio being alike implied in τὰ μεμειγμένα themselves, of course πως ἔχοντα: cf. *Metaph.* 1036 b 24, 30. To assert that this is not all, that some other factor is necessary, is to impugn the theory. Properly speaking, σύνθεσις means a mechanical combination or parathesis, where the components suffer no internal change from being placed side by side, while κρᾶσις always and μεῖξις often denote what we should call a chemical combination, the component parts being modified or even losing their identity when they are brought together. Cf. *De Gen. et Corr.* I. c. 10, especially 328 a 3 sqq. The use of the terms, however, is not always consistent: compare *Metaph.* 1042 b 16 sq., where κρᾶσις is given as an instance of σύνθεσις, with 1092 b 24, 26, where μείξει is distinguished from συνθέσει, and 1085 b 12 μίξις ἢ θέσις ἢ κρᾶσις, where these three modes of forming compounds are mutually exclusive.

a 25 τί δή ποτε...26 τοῦ ζῴου. Alex. Aphr. ap. Philop. 152, 3 sqq. gave two interpretations of this sentence. According to the first, which is accepted by Simplicius and Philoponus, the question put is: "Why, when the mixture con-

stituting flesh perishes, do the mixtures which constitute the other bodily parts perish also?" Hence Alex. Aphr. concluded that the intention of A. is to prove that one mixture must be substituted for the plurality of mixtures or souls to which, 408 a 16, the theory of harmony leads. The second interpretation of Alex. Aphr. divided the sentence into two separate questions, punctuating after *ἀναιρεῖται*, and made *ἡ ψυχὴ* the subject of *ἀναιρεῖται*, as is done by Themistius and the modern editors: (Philop. 152, 10) *εἰ μὴ ἔστιν ἁρμονία ἡ ψυχή, τί ἅμα ἀναιρεῖται τῆς σαρκὸς ἀναιρεθείσης; εἶτα ὡς ἀπὸ ἄλλης ἀρχῆς ὁμοίως δὲ καὶ τοῖς ἄλλοις μορίοις ζῴου ἀντὶ <τοῦ> καὶ τοῖς ἄλλοις μορίοις συναναιρεῖται ἑκάστου ἀναιρουμένου.* The first interpretation is obviously not based on our present text. It is not inconsistent with *ἅμα τῷ...καὶ τὸ τοῖς ἄλλοις μορίοις*, but it has not been pointed out that it is equally consistent with *ἅμα τὸ...καὶ τὸ τοῖς ἄλλοις μορίοις*, the reading actually given by Philoponus both in his lemma and his interpretation (see Hayduck's critical apparatus 151, 8: in the Aldine edition of Philop., however, Trincavellus printed *ἅμα τῷ*). There is, moreover, other evidence of such a variant, viz. *ἅμα τὸ* for *ἅμα τῷ*, a 25, in our cod. V, collated by Bekker, and Sophonias, who obviously followed the second interpretation of Alex. Aphr., presents in Hayduck's edition (26, 29) *ἅμα τὸ σάρκα εἶναι*, though a reference to the critical apparatus shows that the MSS. are divided, some having *τῷ σάρκα* and one, A, *τὸ σαρκί*. The words of Simplicius, too, (56, 10) *πῶς καὶ μιᾶς ἀναιρουμένης μίξεως, τῆς καθ' ἣν τὸ σαρκὶ εἶναι, καὶ αἱ τῶν ἄλλων ἀναιροῦνται μίξεις μορίων, καθ' ἃς αὐτοῖς τὸ εἶναι ὡς ζῴου μορίοις* are quite as compatible with *ἅμα τὸ ...καὶ τὸ τοῖς ἄλλοις μορίοις* as with *ἅμα τῷ...καὶ τὸ τοῖς ἄλλοις μορίοις*. Torstrik supposed Alexander's two interpretations to be based on two different readings, in both of which *ἅμα* was followed by *τῷ*, the variation only affecting a 26. With reference to *τῷ* before *τοῖς ἄλλοις* in this line he observes: Alexander, si Philopono [152, 3—6] fides, et *τὸ* novit et in aliis codicibus neutrum vocabulum videtur invenisse [cf. Philop. 152, 10—17], siquidem Al. haec habet: *εἰ δ' ἐστὶν ἕτερον ἡ ψυχὴ τῆς μίξεως, τί δή ποτε ἅμα τῷ σαρκὶ εἶναι ἀναιρεῖται* (int. *ἡ ψυχή*) *καὶ* (omisso *τῷ* vel *τὸ*) *τοῖς ἄλλοις μορίοις τοῦ ζῴου;* Rectius Themistius (25, 26 H., 46, 18 Sp.) *πάλιν γὰρ εἰ παντελῶς ἕτερον ἡ ψυχὴ τῆς μίξεως καὶ τῆς κράσεως, διὰ τί τούτων φθειρομένων φθείρεται εὐθὺς ἡ ψυχή; λυομένου γὰρ τοῦ λόγου τῆς σαρκὸς καὶ τῶν ἄλλων ἑκάστου τῶν τοιούτων λύεται εὐθὺς καὶ ἡ ψυχή.* On *τὸ σαρκὶ εἶναι* (which is one way of expressing *τὸ τί ἦν εἶναι* of *σάρξ*), form, quiddity or notion of flesh, see *notes* on 429 b 10 sqq., *Ind. Ar.* 221 a 34 *εἶναι* cum dativo praedicati notionem substantialem significat, 429 b 10 sqq. Hence without any predicate attached Simpl. *in Phys.* 735, 31 *τὸ εἶναι...τὸ συνήθως ὑπὸ τοῦ Περιπάτου λεγόμενον καὶ τὸ εἶδος σημαῖνον.* For the omission of a second *εἶναι* with *τοῖς ἄλλοις μορίοις*, cf. 413 b 29 *αἰσθητικῷ γὰρ εἶναι καὶ δοξαστικῷ* [sc. *εἶναι*] *ἕτερον*, *Phys.* I. 3, 186 a 28 *ἄλλο γὰρ ἔσται τὸ εἶναι λευκῷ καὶ τὸ δεδεγμένῳ* [sc. *εἶναι*], *Metaph.* 1031 a 32, b 8, 9.

Why, asks A., does the soul itself cease to exist as soon as the form of flesh or of some other bodily parts is destroyed? The question assumes that soul is perishable: destroy the flesh and other bodily parts, viz. the *ὁμοιομερῆ*, and the soul ceases to exist. How is this to be accounted for, if the theory of harmony be rejected? Flesh is probably singled out because it is the necessary condition of touch, the one sense which is indispensable for the animal: cf. 414 b 3, 413 b 8 sq., 435 b 4—19.

a 26. πρὸς δὲ τούτοις. A second difficulty: not only does the destruction of the flesh and other bodily parts imply the simultaneous destruction of the soul, but also the body decays as soon as the soul leaves it. The second argument is a sort of pendant or complement to the last, and in introducing it Them. (25,

29 H., 46, 22 Sp.) replaces πρὸς δὲ τούτοις by ἀλλὰ καὶ ἔμπαλιν (so Philop. 152, 24 sq.), which gave Torstrik unnecessary trouble.

a 26 εἴπερ μὴ ἕκαστον...28 ὁ λόγος τῆς μείξεως. A plurality of souls dispersed over the body was proved (a 16 sqq.) to follow from the assumption that soul is harmony in the sense of λόγος τῆς μείξεως. In other words, each of the bodily parts will in that case have a soul of its own. If we reject this assumption, we reject the consequence with it. The εἴπερ μὴ clause supposes the consequence to be no longer true, the εἰ μὴ clause supposes the assumption on which this consequence depends to be no longer true. It remains to see what follows. A double conditional clause recurs 409 b 2 sq.

a 28. τί ἐστιν...ἀπολειπούσης. If, then, we disallow the theory of harmony, the connexion between body and soul so manifestly seen at death is left unexplained: we do not see why the destruction of the body involves that of the soul, or why the extinction of life (here called the departure of the soul or vital principle) involves the disintegration of the body. There is no possible way of accounting for the decay and dissolution of the bodily parts which, as a matter of fact, follow upon the departure of the soul at death: 411 b 8 ἐξελθούσης γοῦν διαπνεῖται καὶ σήπεται. Cf. *De Part. An.* 641 a 18 sq. We are now assuming that the soul is not the λόγος τῆς μείξεως. Obviously this λόγος itself is not destroyed; for anything that we can urge to the contrary, the departure of the soul leaves it unaffected, and it is this which determines the existence of flesh as flesh and bone as bone, 408 a 15 καθ' ἣν [μεῖξιν] σὰρξ καὶ καθ' ἣν ὀστοῦν. The objections last urged (408 a 24—28) suggest that when A. comes to set forth his own theory he will take into account this mutual connexion of soul and body.

408 a 29—b 29. At this point comes a pause in the criticism and refutation. The two theories of harmony and circular motion are dismissed, but, before A. proceeds to refute the self-moving number of Xenocrates, he stops to consider once more if motion can be attributed to the soul and, if so, in what sense this is possible [§ 9]. This leads him to ask whether the functions of soul might not with greater propriety in all cases be referred to the animal to whom the soul belongs [§§ 10—12], and this in turn leads to a provisional discussion of intellect or thought, νοῦς, which would seem to be unique among such functions [§ 14].

408 a 30. κατὰ συμβεβηκὸς δέ. See 406 a 4 sqq. Such indirect motion is there qualified as καθ' ἕτερον (a 5). The general conclusion is *Phys.* VIII. 6, 259 b 16 ἐν πᾶσι δὲ τούτοις (int. τοῖς αὐτὰ αὑτὰ κινοῦσιν) κινεῖται τὸ κινοῦν πρῶτον καὶ τὸ αἴτιον τοῦ αὐτὸ ἑαυτὸ κινεῖν ὑφ' αὑτοῦ, κατὰ συμβεβηκὸς μέντοι· μεταβάλλει γὰρ τὸν τόπον τὸ σῶμα, ὥστε καὶ τὸ ἐν τῷ σώματι ὂν καὶ τὸ ἐν τῇ μοχλείᾳ κινοῦν ἑαυτό.

a 31. καθάπερ εἴπομεν. The reference is not easily made out: Repetuntur, quae de animi motu constituta sunt (Trend.). What is here stated explicitly is, however, implied more than once in c. 3, e.g. 406 a 30 sqq., b 5—8. **ἔστι** = ἔξεστι. **κινεῖν ἑαυτήν.** Self-motion is merely a special case of causing motion, if both are κατὰ συμβεβηκός. Every passenger in a boat is moved κατὰ συμβ., while the oarsman who helps to propel it indirectly moves himself because he is in the boat. Cf. *Phys.* VIII. 6, 259 b 16—20 just cited.

a 32. οἷον here, as often, = "that is to say," or "I mean," referring to κινεῖν ἑαυτήν. Cf. 421 b 9, 429 a 6, 8.

a 34 ἀπορήσειεν ἄν...408 b 1 ἀποβλέψας. The stress is rather on the participle than on the finite verb. In discussing the question whether soul is or is not moved, it would be more reasonable to fix our attention on the facts now to be cited.

408 b 5. τὸ δ' οὐκ ἔστιν ἀναγκαῖον, "but this does not necessarily follow," i.e. the generally recognised fact that the psychical processes above mentioned are motions (*κινήσεις*) does not prove that soul itself is moved. Compare the demonstrative force of the article before *δὲ* in 416 a 13 *τὸ δὲ συναίτιον* and 423 b 4 *τὸ δ' οὐκ ἔστιν*.

b 6. καὶ ἕκαστον κινεῖσθαι τούτων, i.e. pain, anger, fear, can each of them be called a movement, *κινεῖσθαι*, of a particular sort, as A. goes on to explain: to feel pain is to be moved in a particular way, and so on.

b 7. τὸ δὲ κινεῖσθαί ἐστιν ὑπὸ τῆς ψυχῆς, i.e. the soul is the efficient cause of the movement in question. Cf. 411 a 29 *γίνεται δὲ καὶ ἡ κατὰ τόπον κίνησις τοῖς ζῴοις ὑπὸ τῆς ψυχῆς*. As here *εἶναι*, so there *γίγνεσθαι* is followed by *ὑπὸ* and the genitive, which is more common after *συμβαίνει* or a passive verb. Cf. Thuc. I. 130, § 1 *ὢν ἐν ἀξιώματι ὑπὸ τῶν Ἑλλήνων*: *ib.* VI. 15, § 3.

b 8. τὸ τὴν καρδίαν ὡδὶ κινεῖσθαι. The movement of the heart is of a particular kind (*ὡδί*) according to the definition, 403 a 25 sqq., 31 sq. The efficient cause is the soul, so that *ὑπὸ τῆς ψυχῆς* must be mentally supplied with all three examples *ὀργή*, *φόβος* and *διάνοια* : cf. 432 b 31 sq.

b 9. ἢ τὸ τοῦτο ἴσως ἢ ἕτερόν τι. Here *τὸ τοῦτο* is Bonitz' conjecture for *τοιοῦτον* of MSS.: *τοῦτο* and *ἕτερόν τι* are subjects of *κινεῖσθαι* understood: see his discussion of the whole passage, *Arist. Stud.* II., pp. 21—24. "Discursive thought is the movement of this [the heart] or of some other part." It is true that *τοιοῦτον* (MSS.) and *ἕτερόν τι* might conceivably be accusatives of manner, *τὴν καρδίαν* being understood as the common subject of *κινεῖσθαι*. But there is no necessity to refer the motions exclusively to the heart, for A. is putting hypothetical cases by way of illustration, and the second alternative is not seriously intended by A. Possibly <*τὸ*> *τοιοῦτον* would be enough change. Cf. *Metaph.* 1035 b 25—27, where, as he is only using an illustration, A. professes to be neutral as to the conflicting claims of heart or brain to be the seat of life: *διαφέρει γὰρ οὐδὲν* [for the present purpose] *πότερον τοιοῦτον*. The bodily change accompanying thought must be referred to the *φάντασμα* (431 a 14 sqq., 432 a 3—10, *De Mem.* 2, 453 a 14—31): in the last passage the bodily processes set up voluntarily in the effort to recollect something are said to continue automatically, as it were, after the voluntary effort has ceased, as is proved by the fact that something which we have been trying in vain to recollect suddenly flashes into the mind when we are no longer thinking about it.

b 9 τούτων δὲ...11 κατ' ἀλλοίωσιν. A remark thrown in, which does not bear on the main argument, though it serves to show that *κινήσεις* (b 6 above) must be taken in the generic sense, including *φορὰ* and *ἀλλοίωσις* as species of change. The beating of the heart and the flow of blood would be instances of *φορά*, that is *κινήσεις κατὰ τόπον*; while, when in fear the blood runs cold, this illustrates qualitative change (*ἀλλοίωσις*): und davon tritt das eine ein, indem etwas eine Ortsveränderung, das andere, indem etwas eine Qualitätsveränderung erfährt (Bz., l.c., p. 23): "and some of these states occur on the local movement, others on the qualitative change, of certain [bodily] parts (what parts and how moved does not concern us here)." The movements take place, not in the soul b 15 *infra*, but in the animal or composite substance of soul and body. They are clearly distinct from the psychical activities, of which they are the corporeal conditions. Both psychical activity and corporeal change belong as attributes to the composite substance, and the former, like the latter, is often, in default of a better term, designated *κίνησις*.

b 11. ποῖα δὲ καὶ πῶς, int. *κινεῖται* supplied from *τινῶν κινουμένων*. **ἕτερός ἐστι λόγος,** "is another question": cf. 419 a 7, 427 b 26. Philoponus imagines

that the *De Part. An.* or the *De Mot. An.* may be meant. **τὸ δὴ λέγειν.** Here begins the apodosis to b 5 *εἰ γὰρ*...in the judgment of Bonitz l. c., who accordingly adopts *δὴ* though only found in codd. S T.

b 13 βέλτιον γὰρ ἴσως...14 τὸν ἄνθρωπον τῇ ψυχῇ. We are dealing with certain *ἔργα καὶ πράξεις*, or *πάθη καὶ ἔργα*. We have to determine what is the *ὑποκείμενον* or logical subject to which they should be attributed. If it is absurd to predicate weaving and building of the soul, it can only be partially true to say that the soul pities or learns or thinks. The logical subject must be the same in the two cases, viz. the man, the *ἔμψυχον ζῷον* who pities, learns or thinks with, in, or by means of, his soul.

No ground is alleged, but the decision ultimately depends upon the solution of the question discussed in I., c. 1, particularly 403 a 3—b 19, whether any functions of the soul are independent of the body: whether in short the soul or any part of it is *χωριστόν* (cf. 403 a 10—12) or *οὐσία τις ἐγγινομένη* (408 b 18). In spite of the preference which A. avows for the more correct expression he goes on using the less correct form of ordinary language throughout the treatise and talks like other people (*φαμὲν γὰρ* 408 b 1) of the soul as the subject of emotions, sensations and processes of thought, just as if he had never laid down this canon. But all the time he is aware that the variation concerns only the expression and not the thing meant. Cf. e.g. 431 b 2—6, *Eth. Nic.* 1174 b 17 *αὐτὴν δὲ* [int. *τὴν αἴσθησιν*] *λέγειν ἐνεργεῖν, ἢ ἐν ᾧ ἐστί, μηθὲν διαφερέτω.*

b 15. τοῦτο δὲ μή, int. *λέγειν*. Our meaning must be carefully circumscribed. The man is the subject who pities or learns with his soul. To pity and to learn is to be moved (*κινεῖσθαι* 408 b 5 sqq.). But we must not imply that the movement goes on in the soul. Either it starts from the soul as efficient cause (*ἀπ' ἐκείνης*, cf. b 7 *ὑπὸ τῆς ψυχῆς*): or in sensation it starts from the external object and reaches to the soul (*μέχρι ἐκείνης*), i.e. to the *αἰσθητικὸν* which is, as we shall see in II. 12, 424 a 27 sq., *λόγος τις καὶ δύναμις τοῦ αἰσθητηρίου.* This *αἰσθητικὸν* undergoes a change, which, though not strictly either *πάθος* or *ἀλλοίωσις*, is often so described (417 b 16—19, taken with 417 b 5—7, 431 a 4—6). The common groundwork of this view of sensation as the transmission of a stimulus or impression through the body to the soul is to be found in Plato. Cf. *Phil.* 33 D *ἐπὶ τὴν ψυχήν*, *Tim.* 45 D *μέχρι τῆς ψυχῆς*, 64 B *ἐπὶ τὸ φρόνιμον*, 67 B *μέχρι ψυχῆς* and *Theaetet.* 191 D, E, the waxen block.

b 16. οἷον ἡ μὲν αἴσθησις ἀπὸ τωνδί, int. *κίνησίς ἐστιν*. *Ἀπὸ τωνδί = ἀπὸ τῶν αἰσθητῶν* which are often called *τὰ κινοῦντα*. The sensible object is the efficient cause; it communicates motion to the medium, and the medium to the sense-organ, 417 b 19—21, 426 b 29 sqq. Compare for sensation as *κίνησις* or *ἀλλοίωσις* 415 b 24 sq., 416 b 33 sq., 417 a 14 sqq., and for the mechanism assumed in the transmission of motion, e.g. 419 a 7—31, 431 a 17—20, 434 b 24—435 a 10.

b 17. ἡ δ' ἀνάμνησις. The subject of *De Mem.*, c. 2 is recollection and its relation to memory and imagination as understood by A.: see Zeller, *Aristotle* etc., *Eng. Tr.* II. 73 sqq., and Beare, *Greek Theories*, pp. 312—325. Recollection is the conscious reproduction of a memory; it belongs to man and is not shared by the brutes, for it involves a process of inference and deliberation: *De Mem.* 2, 453 a 8—14. To recall what we are in quest of is not always in our power (453 a 20), but the search for it is obviously intentional: herein differing from memory, i.e. the efficient cause is *ὁ ἀναμιμνησκόμενος*, acting spontaneously, and this is here expressed by *ἀπ' ἐκείνης*. The process of recollecting is explained *De Mem.* 2, 453 a 22 *ὁ ἀναμιμνησκόμενος καὶ θηρεύων σωματικόν τι κινεῖ, ἐν ᾧ τὸ πάθος*, and in fuller detail 451 b 10 sqq. In it what we are in search of is an

imagination; this A. defines as a *κίνησις*, the result, as he explains, of a previous sensation, itself a *κίνησις*, 428 b 10 sqq.

b 18. ἢ μονάς. A correction of *κινήσεις* to suit the particular case of the image recalled to the memory. As explained in the last note, the image is a survival from a past sensation (*ἀσθενὴς αἴσθησις*=decaying sense, *Rhet.* I. 11, 1370 a 28). That it should thus persist and remain is a condition necessary for memory and recollection. Cf. 425 b 24 sq., *note*, 429 a 4 *διὰ τὸ ἐμμένειν* [int. *τὰς φαντασίας*] *καὶ ὁμοίας εἶναι ταῖς αἰσθήσεσι*, *Anal. Post.* II. 19, 99 b 36 *μονὴ τοῦ αἰσθήματος*, *ib.* 100 a 2, 6, 15 sqq. *De Mem.* 2, 452 a 10, Them. 28, 17 H., 51, 23 Sp. *εἰ δὲ μὴ κίνησίν τις λέγοι τὰ ἐγκαταλείμματα τῶν αἰσθητῶν, ἀλλὰ μονὴν μᾶλλον καὶ ἠρεμίαν, πρός γε τὸν παρόντα λόγον οὐδὲν διοίσει*, *ib.* 28, 25 H., 52, 6 Sp. *εἰ δὲ καὶ τὰς ἐνεργείας τις κινήσεις λέγοι, πρὸς τοὔνομα ὅπερ εἶπον καὶ πρότερον οὐ χρὴ φιλονικεῖν, διορίζεσθαι δέ, ὅτι εἴπερ καὶ τὰ τοιαῦτα κινήσεις, ἀλλ' ἕτερόν γε εἶδος τοῦτο κινήσεως, ὅπερ καὶ αὐτὸς διαρρήδην ἐφεξῆς συγχωρεῖ.* He cites 417 b 5—7, 12—15, 431 a 4—7. See also Simpl. 58, 33 sqq.

408 b 18—29. The man, we said, thinks and learns with his soul: more precisely, with his intellect, which is an immanent form, indestructible and exempt from suffering. True, the process of thinking becomes enfeebled by old age, but old age is due to bodily decay. Thinking, like loving and hating and remembering, should properly be attributed, not to the soul, but to the individual possessor of the soul, as such. Hence, too, it follows that, when this individual ceases to exist, his memory and love cease also.

Among the difficulties of the passage are (1) the anomalous position of *νοῦς* as *οὐσία τις ἐγγινομένη*, when the composite substance of the animal already has a form, viz., its soul, 407 b 23 sq.; (2) the argument from the senses, which seems to prove too much; (3) the assumed distinction between *διανοεῖσθαι* and *νοεῖν* (cf. Them. 30, 24 sqq. H., 55, 19 sqq. Sp.), which appears to me quite arbitrary, since either verb may stand for the act of thinking in the individual; (4) the mention of functions not intellectual, memory and love, apparently in connexion with the intellect, if that is the meaning of *ἐκεῖνο*, b 26—28. But more probably *ἐκεῖνο*=soul, in contradistinction to *τοῦτο*=the body, *τὸ ἐν ᾧ*. This use of the pronouns would be regular, for body is better known to us and from it we infer soul.

b 18. ὁ δὲ νοῦς. Simpl. 59, 14 *ἡ δὲ ἀνθρωπίνη ψυχή, ἣν νοῦν καλεῖ.* This suggestion would remove the first and the last of the difficulties just stated, but it is at variance with A.'s use of the term *νοῦς*: cf. 407 a 6 sqq., 429 a 22 sq., 28, 431 b 26 sq. The exact relation of the thinking part to the rest of soul is nowhere made perfectly clear: cf. 413 b 24—27, 429 a 10—12, b 16 sq., 431 b 17—19. **ἔοικεν ἐγγίνεσθαι.** Simpl. 59, 16 *δηλαδὴ τῷ σώματι, ἀλλὰ ποτὲ καὶ ὡς χωριστήν, ὅπερ ἀλλαχοῦ φησιν ἐπεισιοῦσαν*, viz., *De Gen. An.* II. 3, 736 b 27 *λείπεται δὲ τὸν νοῦν μόνον θύραθεν ἐπεισιέναι καὶ θεῖον εἶναι μόνον.* Hence *ἔοικεν* expresses A.'s own conclusions objectively stated. Cf. 402 b 16, 403 a 8. The discussion in *De Gen. An.* II., c. 3 of the origin of life and mind has naturally excited no little interest, and strangely divergent views have been current respecting "the intellect which is introduced from outside" 736 b 27 sq., *ὁ θύραθεν νοῦς* 744 b 21 sq. (Cf. *De Insomn.* 2, 460 b 2 *τοῦ θύραθεν αἰσθητοῦ*, the external sensible.) See Grote, *Aristotle*, pp. 480—2, 2nd edition (II., pp. 220—223, 1st edition), Kampe, *Erkenntnisstheorie des Ar.* pp. 3—50; and on the other side Brentano, *Psychologie des Ar.* pp. 195—202 (cf. pp. 8—29), Hertling, *Materie und Form*, pp. 163—170. A judicious criticism will be found in Zeller, *Aristotle*, Vol. II. pp. 6 *note* 2, 95 *note* 2, 96 *note* 1 and pp. 119—123 (Eng. Tr.). On p. 100, *note* 1, after citing 736 b 15—25, which concludes with the words

ὅτι μὲν τοίνυν οὐχ οἷόν τε πάσας [all parts of the soul] προϋπάρχειν, φανερόν ἐστιν...ὥστε καὶ θύραθεν εἰσιέναι ἀδύνατον, Zeller continues: "it is obvious that according to A. προϋπάρχειν and θύραθεν εἰσιέναι are inseparably connected, and that accordingly, if the latter is true of the Nous and of it alone, the former must also be true." In our treatise A. is not specially concerned with the question: any reference either to the mortality or immortality, the pre-existence or the post-existence, of the soul or any part of it comes in quite incidentally.

b 19. οὐσία τις. Simpl. 59, 17 οὐχ ὅτι μὴ αἱ ἄλλαι ψυχαὶ οὐσίαι (πᾶσα γὰρ ζωὴ οὐσία), ἀλλ' ὡς ἄυλον ὑπάρχουσαν καὶ καθ' αὑτὴν ὑφεστῶσαν. This εἰκὸς is in contrast with that of 403 a 8 sqq., where the conditional inference is (403 a 9) οὐκ ἐνδέχοιτ' ἂν τοῦτ' [int. τὸ νοεῖν] ἄνευ σώματος εἶναι. Cf. 403 a 10—12 εἰ μὲν οὖν...χωριστή. The same attitude of reserve is maintained in the earlier chapters of Bk II., see especially 413 b 24—27, the solution being reserved for III. c. 5.

b 19. καὶ οὐ φθείρεσθαι, *vide infr.* b 25 ἀπαθές, b 29 θειότερόν τι καὶ ἀπαθές, 413 b 26 γένος ἕτερον, 27 ἀΐδιον, 430 a 17—25. The teaching of the *Metaphysics* is that εἶδος has the best right to be considered οὐσία, and that τὸ σύνολον or σύνθετος οὐσία ἐξ ὕλης καὶ εἴδους derives its title from the possession of εἶδος, which is eternal and immobile and does not come into being or cease to be like τὸ σύνολον, *Metaph.* 1033 b 5—19, 1039 b 20—27, 1043 b 14—23. In concrete things, whether products of nature or of art, the form is combined with, or immanent in, the matter. When the concrete thing perishes or ceases to exist as such, form and matter part company and the latter is resolved into its elements. The question, what becomes of the form, is mentioned and postponed in *Metaph.* 1043 b 18—21, 1070 a 13—18, 21—27. In both passages the view is implied that strictly the form of products of art does not survive the destruction of these products (unless it be identified with ἡ τέχνη, 1070 a 15). In the latter passage the instance of a possible survival of form as τόδε τι 1070 a 14 (cf. χωριστόν, 1043 b 19) is the same as that given here in *De A.* viz. νοῦς: *ib.* 1070 a 24 εἰ δὲ καὶ ὕστερόν τι ὑπομένει, σκεπτέον. ἐπ' ἐνίων γὰρ οὐδὲν κωλύει, οἷον εἰ ἡ ψυχὴ τοιοῦτον, μὴ πᾶσα ἀλλ' ὁ νοῦς· πᾶσαν γὰρ ἀδύνατον ἴσως.

b 19 μάλιστα γὰρ ἐφθείρετ' ἄν...24 καὶ νόσοις. The argument appears to be from analogy: cf. 429 a 13 sq. The decay of the body through age does not imply decay of the sensitive faculty or sensitive soul and, if so, bodily decay does not imply a similar decay in the intellect. Not νοῦς itself, but that in which it resides, τὸ ἐν ᾧ, is impaired in the same way as the senses suffer when the sense-organs are impaired temporarily by intoxication or permanently by disease. A. admits the fact that mental power decays as much as sight or hearing, 408 b 24 (*Pol.* 1270 b 40 διανοίας γῆρας). Why, then, may we not similarly argue that the sensitive faculty is indestructible? Simplicius 60, 3 makes the inference depend on the fact that the mind is vigorous just when the body is enfeebled: τεκμαίρεται...ἐκ τοῦ ἀντικειμένως τῷ σώματι ἀκμάζειν αὐτὴν (int. τὴν λογικὴν ἐνέργειαν), if it does not grow strong and feeble along with the body, neither is it generated and destroyed with the body (*ib.* 60, 3—14). Cf. *Probl.* XXX. 5, 955 b 23 διὰ τί πρεσβύτεροι μὲν γινόμενοι μᾶλλον νοῦν ἔχομεν, νεώτεροι δὲ ὄντες θᾶττον μανθάνομεν, where in the course of the discussion it is stated b 31 τὸν αὐτὸν τρόπον καὶ ὁ νοῦς τῶν φύσει οὐκ εὐθὺς ἀλλ' ἐπὶ γήρως ἡμῖν μάλιστα παραγίνεται, καὶ τότε ἀποτελεῖται μάλιστα, ἂν μὴ ὑπό τινος πηρωθῇ, καθάπερ καὶ τὰ ἄλλα τὰ φύσει ὑπάρχοντα. In spite of 408 b 22 ὥστε, and the dogmatic tone of the sentence ὥστε...b 23 ἀλλ' ἐν ᾧ, the sensitive soul would seem to be introduced simply by way of illustration and not to furnish an argument *a fortiori.* The difficulty with νοῦς is that, unlike sense, it has no special bodily organ: 429 a 27. Cf. 413 a 7 διὰ τὸ μηθενὸς εἶναι σώματος ἐντελεχείας. We

have no definite knowledge of corporeal movements associated with it, as with sensation and recollection.

b 20. **ἀμαυρώσεως.** This explains b 22 *γῆρας*, the enfeeblement or intellectual weakness of old age; cf. b 24 *μαραίνεται*. **νῦν δ' ἴσως.** *Ind. Ar.* 492 a 60 per voc. *νῦν δέ* id quod in re ac veritate est ei opponitur, quod per conditionem aliquam positum erat, 412 b 15, cf. 423 a 10, 425 b 9, 429 a 27. **ὅπερ**, elliptical: a second *συμβαίνει* must be understood, either before *ὅπερ* or after *ἐπὶ τῶν αἰσθητηρίων*. Contrast the form of the expression with 430 a 2. See *note* on *καθάπερ* 403 a 12.

b 22. **τοιονδί**, of a given kind, adapted for use: 412 b 11, 16, 27. **τὸ γῆρας.** Supply *ἐστὶ* or *συμβαίνει*. *γῆρας* is pregnant; age and its accompanying mental enfeeblement. *Vide supr.* *ἀμαυρώσεως*, 408 b 20.

b 23. **ἀλλ' ἐν ᾧ**, i.e. *τὸ ἐν ᾧ*, the substratum or *ὑποκείμενον* of which the soul is the form, in short, the living body. Written out in full it would run: *ἀλλὰ τῷ πεπονθέναι τι τὸ ὑποκείμενον ἐν ᾧ ἐστὶν ἡ ψυχή.*

b 25. **ἄλλου τινὸς ἔσω φθειρομένου.** Steinhart, *Progr. von Schulpforte*, 1843 and Bonitz, *Arist. Stud.* II. 3, p. 24 *note*, object that any corporeal decay must take place outside the immaterial *νοῦς*. "Das körperliche Organ, welches auch immerhin dies sein möge, wird doch natürlicherweise der geistigen Kraft gegenüber nicht als ein Inneres sondern als ein Äusseres zu bezeichnen sein" (Bz.). Νοῦς of course has no bodily organ (429 a 27) in the sense in which the eye and the ear are the organs of sight and hearing respectively. The expression of the text is intelligible, if *ἔσω* = "within the body" or if *ἔσω* = *ἔσωθεν*, when something distinct from *νοῦς* perishes from internal decay. Cf. *De Vita* (*De Iuvent.*) 4, 469 b 6—20, a passage which teaches that life depends ultimately upon a certain degree of heat in the central bodily organ, the heart or its analogue: (469 b 13) *διὸ τῶν μὲν ἄλλων μορίων ψυχομένων ὑπομένει τὸ ζῆν, τοῦ δ' ἐν ταύτῃ* [int. *τῇ καρδίᾳ ἢ τῷ ἀνάλογον ψυχομένου*] *φθείρεται πάμπαν, διὰ τὸ τὴν ἀρχὴν ἐντεῦθεν τῆς θερμότητος* [*τῆς συμφύτου φυσικῆς*] *ἠρτῆσθαι πᾶσι.* **αὐτὸ δὲ ἀπαθές ἐστιν.** Simpl. 60, 22 *τὸ νοοῦν δηλαδή*, understood from b 24, *τὸ νοεῖν*, the grammatical subject. Cf. *note* on 403 a 22. *αὐτὸ* = "in its own nature," viewed apart from its relation to the body in which it resides and which conditions its activity. See *note* on *ἀπαθές*, 429 a 15. Here and in b 29 *infra* "exempt from suffering" implies "indestructible."

b 26. **ἐκείνου**, int. *τοῦ νοοῦντος*, see on b 25 *αὐτό*. So I have translated it, following the traditional view. But it would be quite possible, and far more satisfactory, to understand it of the soul, *τῆς ψυχῆς*, both here and b 27, 28 *infra*; cf. b 15—17 *supra*, where *ἐκείνῃ* = the soul. **τουδὶ τοῦ ἔχοντος ἐκεῖνο**, viz. *τοῦ ἐμψύχου σώματος*, in so far, A. adds, as it contains the thinking faculty or, more probably, the soul. Cf. *note* on 403 a 4.

b 27. **τούτου φθειρομένου**, explained by b 26 *τουδὶ τοῦ ἔχοντος ἐκεῖνο*. "This" means the particular *σύνθετος οὐσία* made up of body and soul, which ceases to be at death, as it began to be at birth. The present participle and present ndicative express invariable coincidence, as in 408 a 28, b 9 sq.

b 28. **μνημονεύει**, int. *τὸ μνημονεῦον* (i.e. the man himself): and similarly with *φιλεῖ* supply *τὸ φιλοῦν*. Cf. *note* on 403 a 22. To make *νοῦς* the subject of *μνημονεύει*, as some have done, implies that memory and love are functions of *νοῦς* as distinct from its individual possessor, and, further, that they belong to the thinking part of soul. **ἦν** might be taken, in spite of b 29 *ἀπόλωλεν*, to mean "is, as we saw," viz. b 13 sqq.

b 28. **τοῦ κοινοῦ**, i.e. *τοῦ ἐκ ψυχῆς καὶ σώματος*, *Ind. Ar.* 399 a 28 ea communio, quam *κοινὸς* significat, cerni potest in mistione plurium elementorum.

Cf. *Pol.* 1254 a 29 ὅσα γὰρ ἐκ πλειόνων συνέστηκεν καὶ γίνεται ἕν τι κοινόν. Τὸ κοινόν=ἡ σύνθετος οὐσία ἐξ ὕλης καὶ εἴδους, *Metaph.* 1043 a 29 δεῖ δὲ μὴ ἀγνοεῖν ὅτι ἐνίοτε λανθάνει πότερον σημαίνει τὸ ὄνομα τὴν σύνθετον οὐσίαν ἢ τὴν ἐνέργειαν καὶ τὴν μορφήν, οἷον ἡ οἰκία πότερον σημεῖον τοῦ κοινοῦ...ἢ τῆς ἐνεργείας καὶ τοῦ εἴδους...καὶ ζῷον πότερον ψυχὴ ἐν σώματι ἢ ψυχή. It is unnecessary to refute Them. who is forced by exegetical exigencies to understand by this term ὁ παθητικὸς νοῦς: see, e.g., 105, 18—22 H., 194, 10—16 Sp. Or, again, those who, restricting φθειρομένου to the present life, explain τὸ κοινὸν ἀπόλωλε by saying that the old man neither remembers nor loves as he did in his youth: the man he was in youth he has already ceased to be.

b 29. θειότερον. Cf. *De Gen. An.* II. 3, 736 b 27 λείπεται δὲ [fort. δὴ] τὸν νοῦν μόνον θύραθεν ἐπεισιέναι καὶ θεῖον εἶναι μόνον· οὐθὲν γὰρ αὐτοῦ τῇ ἐνεργείᾳ κοινωνεῖ σωματικὴ ἐνέργεια, 737 a 9 τὸ μὲν χωριστὸν ὂν σώματος, *ib.* II. 6, 744 b 21 καθάπερ οὖν εἰς τὴν αὔξησιν ὁ θύραθεν ταῦτα ποιεῖ νοῦς, *Metaph.* 1074 b 16 and *Eth. Nic.* x. 7, 1177 b 30 θεῖον ὁ νοῦς πρὸς τὸν ἄνθρωπον, where the comparison is, as here, between the individual and νοῦς in him, *ib.* 1177 a 16 τῶν ἐν ἡμῖν τὸ θειότατον. Τὸ θεῖον is joined with τὸ ἀεὶ 415 a 29, b 3.

b 30 ὅτι μὲν οὖν...31 ἑαυτῆς. This sentence resumes the conclusion reached 408 a 29 sqq. The whole passage 408 a 34—b 29 εὐλογώτερον...ἀπαθές ἐστιν is more or less of a digression, though of the first importance as rendering A.'s views more definite. He passes on to examine the latest form of the hypothesis that soul is the principle of motion, viz., that of his friend Xenocrates, the contemporary head of the Academy.

b 31. ὑφ' ἑαυτῆς, int. κινεῖται.

b 32 ἀριθμὸν...33 κινοῦνθ' ἑαυτόν. Cf. 404 b 27—30, *Anal. Post.* II. 4, 91 a 35—b 1.

b 33. αὐτοῖς, i.e. τοῖς οὕτω λέγουσιν.

b 34. ἐκ τοῦ κινεῖσθαι, int. τὴν ψυχήν, a pregnant expression for ἐκ τοῦ κινουμένην λέγειν: cf. *supr. note* on 405 b 26.

The criticism of Xenocrates extends from 408 b 32 to 409 b 18. His theory is open to attack, not only on the old grounds, because it represents the soul as in motion, but also on new grounds, because it represents the soul as a number. Throughout it is assumed that number means "sum-total of units," that what is true of the number is true of the component units.

409 a 1—30. A. objects: (1) that a unit in motion is inconceivable. What, he asks, is the moving cause, and how will the unit be moved? Suppose, in the first instance, that the unit is moved by itself, i.e. is at the same time moving and moved: this is impossible, since, as unit, it is without parts and differences [§ 16].

(2) that, since mathematicians hold a surface to be generated by the motion (ῥύσις) of a line and a line by the motion of a point, the movements of the soul ought strictly to be lines. For the unit becomes a point if it has position, and this condition is fulfilled by the number of the soul [§ 17].

(3) Subtract a number or a unit from a number and another number remains; but the cutting parted from the parent stem and the segments of worms continue to live, showing a soul which is specifically the same as that of the parent plant or the worm before division [§ 18].

A. next endeavours to reduce the self-moving unit to identity with the soul-atom of Democritus; and then to elaborate further objections. The reduction implies as above (*a*) that the number is a plurality of units, (*b*) that these units have position. It will then follow (4) that there is no difference between the units having position, of which the soul-number is composed, and the small

spherical soul-atoms of Democritus, for the latter might become points, and, as long as they remain a discontinuous quantity or aggregate, there will still be in this aggregate a factor which moves as well as one which is moved, whatever the size of the individual atoms. Similarly the units of which the soul as a number is composed will require a moving cause, i.e. a unit [or units] which, so far from being at the same time movent and moved, is movent only [§ 19]. Yet how can units differ except by position?

The units will be either the same as, or different from, the points in the body. (5) If different, they will occupy the same place as the points of the body: indeed there may be an infinite number of such units at a single point [of the animate body] [§ 20].

(6) if the units are not distinct from the points in the body and if the number which is the soul is the sum of these points, it follows that all bodies are animate [§ 21].

(7) Further, on this latter view it will be impossible to make soul separable from body. Soul is an assemblage of units having position, i.e. points, and the points of a body cannot be separated from the body, for geometry teaches that a line is not composed of points and consequently cannot be resolved into points any more than a surface into lines or a solid into surfaces, all three being limits or boundaries but not constituent parts [§ 22].

409 a 1. μονάδα. A number is a πλῆθος μονάδων, *Metaph.* 1053 a 30. Cf. 1039 a 12 εἴπερ ἐστὶν ὁ ἀριθμὸς σύνθεσις μονάδων, ὥσπερ λέγεται ὑπό τινων, 1085 b 22 τὸ γὰρ πλῆθος ἀδιαιρέτων ἐστὶν ἀριθμός, 1001 a 26 sq., 1089 b 1, 9. If the number moves, so also does each of its component units. Philop. 166, 10 sq., Simpl. 62, 19 μεριστὸν γὰρ τὸ μεριστῶς ἐνεργοῦν [i.q. κινούμενον], ἀμερὴς δὲ ἡ μονάς.

a 2. ὑπὸ τίνος. It is conceivable that the number or assemblage of units moves because (*a*) each unit is self-moved, or because (*b*) some units are movent only and others moved only. A. developes (*a*), leaving (*b*) for the moment out of sight, though it recurs below (409 a 15—18): Simpl. 62, 20 οὔτε γὰρ ὑφ' ἑαυτῆς...24 οὔτε ὑφ' ἑτέρας.

a 2. καὶ πῶς, int. κινεῖται. In any case this is distinct from the πῶς χρὴ νοῆσαι of the preceding line, which is merely a rhetorical way of affirming that the motion of the unit is inconceivable. But the exact meaning of the second πῶς is open to doubt. It cannot well refer to the species of motion (ἀλλοίωσις, αὔξησις, φορά: Philop. 166, 9), for it is absurd to predicate growth or qualitative change of units. If, however, the units are reduced to points (*vide infr.*) it would be pertinent to ask whether they move with rectilinear or circular motion in space, φορά (Philop. 166, 8). But Simpl. (62, 26 sq.) interprets differently: τὸ οὖν δεύτερον πῶς τῷ ὑπὸ τίνος συντεταγμένον δηλωτικὸν τοῦ μήτε ὡς ἔμψυχον μήτε ἑτεροκινήτως, which he explains by the previous remark (62, 24—26) ἢ γὰρ ἂν ἔνδοθεν, καὶ ἔμψυχος ἔσται· οὐδεμία δὲ μονὰς ζωτικῶς ἐνεργεῖ· ἢ ἔξωθεν, καὶ ἢ ὤσει ἢ ἕλξει· τὸ δὲ ἀμερὲς οὐδέτερον οἷόν τε. If this is right, καὶ πῶς virtually repeats the question ὑπὸ τίνος. **ἀμερῆ...οὖσαν.** On his own principles A. has shown, *Phys.* VI. 10, 240 b 8, ὅτι τὸ ἀμερὲς οὐκ ἐνδέχεται κινεῖσθαι πλὴν κατὰ συμβεβηκός. Cf. 241 a 6 ἔτι δὲ καὶ ἐκ τῶνδε φανερὸν ὅτι οὔτε στιγμὴν οὔτ' ἄλλο ἀδιαίρετον οὐθὲν ἐνδέχεται κινεῖσθαι. If, therefore, the soul-units are reduced to mathematical points (409 a 20—30), the difficulty is just as insuperable to A.

a 3. κινητικὴ δὲ καὶ κινητή, Them. 31, 10 H., 56, 23 Sp. εἰ μὲν γὰρ ἑκάστη ἅμα [int. κινεῖ τε καὶ κινεῖται] πῶς ἀμερὴς καὶ ἀδιάφορος οὖσα κινητική τε ἅμα ἂν εἴη καὶ κινητή. An extended sensible thing, being divisible, may have both attributes in respect of different parts of itself. Cf. *Phys.* VIII. 4, 254 b 27—33 cited at the

end of *note* on 406 a 4, *διχῶς*. **διαφέρειν δεῖ,** Philop. 166, 12 *ἐπειδὴ τὸ κινοῦν, καθὸ κινεῖ, ἄλλο τί ἐστι πρὸς τὸ κινούμενον, ἀνάγκη καὶ τὴν μονάδα αὐτὴν ἑαυτῇ διάφορον εἶναι* [Philop. construes *διάφορος* with dative. *ἑαυτῆς* would have been more usual]. Thus the unit would cease to be a unit as defined.

a 3 ἔτι δ' ἐπεί φασι...5 γραμμαὶ ἔσονται. Them. 31, 15 H., 57, 3 Sp. *στιγμῆς δὲ κίνησις γραμμὴν μὲν ποιεῖ, ζωὴν δὲ οὔ.* This second objection, like the third, is hardly serious. Philop. (166, 26) *διαπαίζει δὲ αὐτούς.* *Anal. Post.* I. 32, 88 a 18 *τὰς δ' αὐτὰς ἀρχὰς ἁπάντων εἶναι τῶν συλλογισμῶν ἀδύνατον*, 88 a 31 *ἕτεραι γὰρ πολλῶν τῷ γένει αἱ ἀρχαί, καὶ οὐδ' ἐφαρμόττουσαι, οἷον αἱ μονάδες ταῖς στιγμαῖς οὐκ ἐφαρμόττουσιν· αἱ μὲν γὰρ οὐκ ἔχουσι θέσιν, αἱ δὲ ἔχουσιν.*

a 7. ἤδη πού ἐστι: Philop. 166, 33 *λέγοντες οὖν τὴν ψυχὴν ἀριθμὸν ἐν σώματι εἶναι ὁμολογοῦσιν, ὥστε αἱ μονάδες τοῦ ἀριθμοῦ κεῖνταί που· ἐν τῷ σώματι γάρ.* If, then, these units are somewhere and have position, they can be treated as points, the only difference between the arithmetical unit and the geometrical point being that the one has not, and the other has, position. *μονάς = στιγμὴ ἄθετος*, and *στιγμή* (or *σημεῖον*) = *μονὰς θέσιν ἔχουσα*, *Metaph.* 1016 b 24 sqq., esp. 29 *τὸ δὲ μηδαμῇ διαιρετὸν κατὰ τὸ ποσὸν στιγμὴ καὶ μονάς, ἡ μὲν ἄθετος μονάς, ἡ δὲ θετὸς στιγμή.* Cf. 1084 b 26 sq. However, the difference between arithmetical units and geometrical points as such is sufficient to constitute them the subject matter of separate sciences.

a 8. ἄλλος ἀριθμός. The remainder, in subtraction, is never the same number. Further, if one (*μονάς*) be subtracted, the remainder is unlike in species to the original number, odd if that was even, even if it was odd, odd and even being the species (*εἴδη*) of number. Cf. *Metaph.* 1043 b 36—1044 a 2; I cite *οὐδ' ἀπ' ἀριθμοῦ ἀφαιρεθέντος τινὸς ἢ προστεθέντος, ἐξ ὧν ὁ ἀριθμός ἐστιν, οὐκέτι ὁ αὐτὸς ἀριθμός ἐστιν ἀλλ' ἕτερος.* Cf. Zeno's argument, *Metaph.* 1001 b 8 sqq.

a 9. τὰ δὲ φυτὰ...ζῇ. These facts are mentioned again, 411 b 19 sqq. Cf. *Metaph.* 1040 b 10—13.

a 10. τὴν αὐτὴν ψυχὴν ἔχειν τῷ εἴδει. The soul in the two segments is always specifically the same, whereas if it were a number we should expect it to be sometimes, if not invariably, of a different species. Philop. may well say 165, 28 *ὁ δὲ 'Αρ., ὡς εἴωθεν, ἐλέγχει τὸ φαινόμενον τοῦ λόγου* and (165, 21) *οὐκ ἄν τις οὐδ' ἄκρῳ δακτύλῳ τῶν μαθημάτων γευσάμενος τοιαῦτα ἂν εἴποι* (int. *κατὰ τὸ φαινόμενον*).

a 10. οὐθὲν διαφέρειν. Simpl. 64, 5 *πρὸς τὸ ἀριθμὸν εἶναι.* A sum of atoms or atomic points will constitute a number just as much as a sum of units.

a 11 καὶ γὰρ ἐκ τῶν Δημοκρίτου σφαιρίων...13 τὸ ποσόν. The effect will be to substitute discontinuous for continuous quantity, a sum of points without magnitude for an assemblage of globules which fill space. Them. 31, 22 H., 57, 12 Sp. *εἴ τις ὑπόθοιτο τὰς Δημοκρίτου σφαίρας μηκέτι σφαίρας, ἀλλὰ στιγμάς, μόνον δὲ αὐτῶν τηροίη τὸ ποσόν*, Philop. 167, 21 *ἐὰν οὖν τὸ μέγεθος τῶν ἀτόμων ἀφέλῃ τις, ἔσονται στιγμαί...23 οὐδὲν δὲ τὴν ὑπόθεσιν Δημοκρίτου λυμαίνεται τὸ ἀφελεῖν τῶν ἀτόμων τὸ συνεχές· οὐδὲ γὰρ διὰ τὸ συνεχῆ σώματα εἶναι ἔλεγεν αὐτὰ κινεῖσθαι, ἀλλὰ διὰ τὸ πλῆθος αὐτῶν τῇ ἀντωθήσει τῇ πρὸς ἄλληλα*, because there could be no collision of atoms unless there were a number of atoms to collide. Similarly, Philop. continues, it is not because the units of Xenocrates are indivisible that the soul which is composed of them is in motion, but because they are the constituents of a discrete quantity or number, *διότι ποσὸν ἦν τὸ ἐξ αὐτῶν, ὁ ἀριθμός.* Simpl. 64, 2 *κἂν γὰρ ἐκ σωματίων τινῶν ποιῇ τὸν ἀριθμὸν ὁ Δημόκριτος, ἀλλ' ἐξ ἀδιαιρέτων διὰ ναστότητα καὶ ἔτι ἀδιαφόρων κατ' εἶδος καὶ τὴν ὑποκειμένην φύσιν. ἀριθμὸς οὖν κατ' ἀμφοτέρους ἡ ψυχὴ ἐξ ἀδιαιρέτων καὶ*

ἀδιαφόρων...7 ἀρκεῖ γὰρ τὸ ποσὸν κατὰ πλῆθος λέγειν ἑκάτερον πρὸς τὸ ἔνια μὲν κινητικὰ ἔνια δὲ κινούμενα ἐξ αὐτῶν ἐξ ἀνάγκης ὁμολογεῖν. By ποσὸν in a 13, 15 is meant διωρισμένον ποσόν: Simpl. 64, 10, Philop. 167, 33. Cf. *Metaph.* 1089 b 34: "every number denotes a *quantum*," ποσόν τι σημαίνει. The conversion of atoms into points will leave their number unaltered. Probably A. used ποσὸν here to avoid confusion with the number of the soul, to keep the view of Democritus distinct from that of Xenocrates. For the analogy between points and units as discrete cf. *Metaph.* 1085 a 3 ἁφὴ μὲν οὐκ ἔστιν ἐν τοῖς ἀριθμοῖς, τὸ δ' ἐφεξῆς, ὅσων μή ἐστι μεταξὺ μονάδων, οἷον τῶν ἐν τῇ δυάδι ἢ τῇ τριάδι. That is, the units in numbers do not come into contact, but have a fixed order of succession with nothing intervening, e.g. the two units in the number two or the three units in the number three follow such an order. Cf. 408 a 8. Points cannot be in contact any more than units: *Anal. Post.* II. 12, 95 b 5 ὥσπερ οὖν οὐδὲ στιγμαί εἰσιν ἀλλήλων ἐχόμεναι, though there is an infinity of such points in a line, 95 b 8 ὥσπερ οὖν γραμμὴ πρὸς στιγμὴν ἔχει, οὕτω τὸ γινόμενον πρὸς τὸ γεγονός. ἐνυπάρχει γὰρ ἄπειρα γεγονότα ἐν τῷ γινομένῳ. See also *Metaph.* 1085 b 27—34. With μένῃ cf. *Metaph.* 1061 a 32 μόνον δὲ καταλείπει τὸ ποσὸν καὶ συνεχές.

a 13. **ἐν αὐτῷ**, i.e. ἐν τῷ ποσῷ τῷ ἐκ τῶν σφαιρίων. This is ἀριθμὸς στιγμῶν, the sum-total of the unextended points to which the atoms have been reduced. Philop. 168, 3 calls it τὸ ὅλον σύστημα. **τὸ μὲν κινοῦν τὸ δὲ κινούμενον.** These words show that the previous τι must be a collective: there will be in the sum-total of such points (the soul) a part which causes motion and a part which is moved. Them. 31, 23 H., 57, 14 Sp. οὐδὲν κωλύει τὰς μὲν κινεῖν αὐτῶν, τὰς δὲ κινεῖσθαι, ὥσπερ εἰ σμικρὰ σώματα ἦσαν. Philoponus appeals to *Phys.* VII. and VIII., where A. has proved that it is impossible for the same thing, whether continuous or discrete, to cause motion and to be moved κατὰ τὸ αὐτό.

a 14. **ὥσπερ ἐν τῷ συνεχεῖ**, in that which is not discrete, but continuous, i.e. in an extended magnitude. Before the spherical atoms were reduced to points, each soul-atom and the soul (i.e. on the atomist theory, the mass or aggregate of spherical soul-atoms) might be described as συνεχές τι, an extended thing, possessed of physical coherence and continuity. The interstices of void would no more deprive it of this attribute than the holes of a sponge, the type to Democritus of all so-called solid bodies, explained by him as really aggregates of atoms "with much void between," even when to sense their texture is as impervious as that of steel. The argument implies that A.'s principles of mechanical motion as laid down in *Phys.* VIII. apply to all extended bodies of whatever size. Thus (ἐν τῷ συνεχεῖ) such an extended body, if it moves itself at all, must according to *Phys.* VIII. be divisible into κινοῦν τι and κινούμενόν τι, for he has just proved, *Phys.* VIII. 5, 257 b 26—258 a 27, that, if it is πρώτως αὐτὸ αὑτὸ κινοῦν, it does not contain a single part or a number of parts which are, like the whole, self-moved. The atoms of Democritus are such extended bodies, extremely—we might almost say, infinitesimally—small. A. takes the limiting case: he supposes the extremely small magnitudes to disappear, and, in place of so many atoms, we get so many points. He argues that the mechanical principles apply even in the limit. Because there was κινοῦν τι and κινούμενόν τι before, there will be κινοῦν τι and κινούμενόν τι after, the conversion into points. Thus A. is arguing, not from the atomist standpoint, but from his own doctrine of motion which made such an assumption necessary. Res continua vero si ipsa se ipsam moveat, deprehendi in eâ partem quae moveat et partem quae moveatur demonstratum est *Phys.* Θ. 5, 257 a 31 sqq. (Torstrik, p. 126.) Cf. second *note* on 407 a 6.

a 14. **διὰ τὸ μεγέθει διαφέρειν ἢ σμικρότητι.** Them. 31, 25 H., 57, 17 Sp. αἱ

μὲν ἔσονται ψυχαί, αἱ δ' οὔ. ἀλλ' εἰ τὸν ἀριθμὸν φυλάττοιεν, ἡ σμικρότης γε αὐτὰς οὐδὲν κωλύσει: provided the sum be constant, A. thinks we may reduce the size of the atoms as much as we like.

a 15 διὸ ἀναγκαῖον...16 κινῆσον τὰς μονάδας. The conclusion that in the hypothetical case the atomic points that are in motion will be necessarily moved by others is now applied to Xenocrates. The component units of the number which is the soul also stand in need of a moving cause, just as much as the soul-atoms of Democritus. But the attempt to remedy this deficiency encounters fresh objections. **διό.** Philop. 168, 1 *ὅτι ἑκάτερος αὐτῶν διωρισμένον ποσὸν ποιεῖ τὴν ψυχὴν αὐτοκίνητον· ὥστε εἰ τῶν ἀτόμων τῶν ἀριθμῶν οἱ μὲν κινοῦσιν, οἱ δὲ κινοῦνται, ἔσται τὸ ὅλον σύστημα αὐτοκίνητον, ὥσπερ καὶ τὸ ὅλον ζῷον λέγεται αὐτοκίνητον, καίτοι τοῦ μὲν κινοῦντος τοῦ δὲ κινουμένου.* **τὸ κινῆσον.** Simpl. 64, 12 *ἄλλο τι παρὰ τὰς κινούμενας δηλαδή, ἐπεὶ καὶ ἑκάστη μονὰς καὶ τῶν Δημοκριτείων σφαιρίων ἕκαστον ἔσται ψυχή* (i.e. *quâ* soul-atom or *quâ* soul-unit, it is soul).

a 16 εἰ δ' ἐν τῷ ζῴῳ...18 τὸ κινοῦν μόνον. Them. 31, 11 H., 56, 26 Sp. *εἰ δὲ αἱ μὲν κινοῦσι τῶν μονάδων, αἱ δὲ κινοῦνται, οὐ τὸ σύστημα αὐτῶν ὅλον ψυχή, ἀλλ' εἴπερ ἄρα αἱ κινοῦσαι μόνον ἐν τῷ συστήματι.* If the number is an assemblage of units, some movent, others moved, it will resemble the *ζῷον*, which is also *σύστημα ὅλον αὐτοκίνητον καίτοι τοῦ μὲν κινοῦντος τοῦ δὲ κινουμένου.* But then it is the movent, not the moved, which is the soul of the animal. Hence the movent units, not the moved, in the number, constitute its soul. Philop. 168, 5 *ἀλλ' ὥσπερ ἐν ζῴῳ τὸ κινοῦν ἡ ψυχὴ καὶ οὐ τὸ κινούμενον, οὕτω καὶ ἐπὶ τοῦ τῆς ψυχῆς ἀριθμοῦ οὐ πᾶς* [int. *ὁ ἀριθμός*] *ἔσται ψυχὴ ἀλλ' αἱ κινοῦσαι μονάδες.*

a 18 ἐνδέχεται δὲ...21 θέσις. This has been considered a new argument and *ταύτην* has been taken to replace *τὴν ψυχήν*. But on the theory impugned it is the number or *πλῆθος μονάδων* and not any single unit which constitutes the soul: cf. a 25, 26. A. is in fact still pressing his last objection. The point just reached is that *τὸ κινοῦν* in the number corresponds to soul in the animal. Plainly in a 18—21 we are dealing with the number and not with the animal. If so, *ταύτην* which is the subject represents strictly *τὸ ἐν τῷ ἀριθμῷ κινοῦν* and not *τὴν ψυχήν*, being attracted to the gender of the predicate *μονάδα* (cf. 404 a 25, *note*): "how can this movent part be a unit?" That *ταύτην* is subject and not predicate seems to have been held by Them. 31, 27 H., 57, 19 Sp. *μονάδας εἶναι τὴν ψυχήν*, Philop. 168, 18 *εἰ οὖν, φησί, μονὰς ἢ ἐκ μονάδων ἐστὶν ἡ ψυχή*, and Simpl. 64, 13 *φησὶ δὲ μὴ ἐνδέχεσθαι μονάδα εἶναι τὴν κινοῦσαν.* Them. and Philop. are aware of the difficulty involved in equating *ταύτην* with *τὴν ψυχήν*: the former evades it by tacitly substituting the plural *μονάδας*, the latter by a bold avowal 168, 18, *μονάδα εἶπεν ἀντὶ τοῦ ἐκ μονάδων* (cf. Soph. 30, 19 sq.). M. Rodier's version, "Et comment est-il possible qu'une unité joue ce rôle?", seems to imply that *μονάδα* is the subject. If one unit is movent and the rest of the units in the number are moved, how does the movent unit differ from the rest? If the units are converted into points, the only quality they acquire is position in space. So far from explaining the difference between those which are movent and those which are moved, this quality raises fresh difficulties. Philop. 168, 27 *καλῶς δὲ εἶπε* **στιγμῆς μοναδικῆς.** *εἰ γὰρ ἡ μονὰς προσλαβοῦσα θέσιν στιγμὴ γίνεται, αἱ δὲ μονάδες ἐξ ὧν ἡ ψυχὴ ἐν σώματι, στιγμαὶ ἄρα ἔσονται. ἐπεὶ οὖν οὐχ ἁπλῶς στιγμὰς ἔλεγον ἀλλὰ μονάδας, αὐτὸς δὲ δείκνυσι ταύτας στιγμὰς οὔσας, εἰκότως μοναδικὰς στιγμὰς εἴρηκεν.* Cf. Simpl. 64, 13—19.

a 21 εἰ μὲν οὖν εἰσὶν ἕτεραι...22 αἱ μονάδες. A. treats *μονάδες* and *στιγμαὶ* as convertible terms, and by *αἱ ἐν τῷ σώματι μονάδες* here he means not the soul-units but the bodily points, precisely, in fact, what he means by *αἱ στιγμαί, καὶ*

being explanatory. From a 7 we might indeed infer that soul-units, like the soul-number, have position in space, but it is extremely awkward to give *ἐν τῷ σώματι* a meaning at variance with that which the words bear a 25, a 26, b 6 sq.: and this awkwardness we can avoid if, as I have said, we understand *μονάδες* here to denote points of body, and the sentence to be elliptical, *ἕτεραι* requiring a supplement, "different [i.e. from the units of soul]." When used at the end of the sentence without any qualification *αἱ μονάδες* unquestionably means the units of soul. The Greek commentators are most careful to distinguish the soul-units from the corporeal points and reserve *αἱ ἐν τῷ σώματι* (or *αἱ σωματικαὶ*) *μονάδες καὶ στιγμαὶ* for the latter only: Them. 31, 30 sqq. H., 57, 24 sqq. Sp.; Simpl. 64, 23 sqq.; Philop. 169, 7 sqq.; Soph. 30, 22 sqq. A. merely assumes that soul is in body. Soul now is an assemblage of unitary points, some movent, others moved. But body itself is an assemblage of points. Either the two sets of points are different or they are the same. (1) Suppose that they are different, i.e. that the soul-units are distinct from the points in the body, the points which body as extended in three dimensions presents, whether it be animate or inanimate. If the soul is in body, then the space its units occupy must at least partially coincide with that occupied by the points of body. Spatial coincidence of soul and body is inevitable. We shall have somewhere in the body a point which is not only a point of the body but also a unitary point of the soul.

a 22. **ἐν τῷ αὐτῷ**, int. *τόπῳ ταῖς ἐν τῷ σώματι*, in the same space as the points of body, Philop. 169, 12 *ἐφαρμόσουσιν αἱ τῆς ψυχῆς στιγμαὶ ταῖς τοῦ σώματος*. Cf. 409 b 3 *infra* and for the full phrase *Metaph.* 998 a 14, 18.

a 23. **καθέξει γὰρ χώραν στιγμῆς**, int. *ἑκάστη τῶν μονάδων*, each of the soul-units which we have agreed to treat as points having position in space.

a 23 **καίτοι...25 καὶ αὐτά**. There will be no limit to such spatial coincidence of soul-points without magnitude. There may be an infinity of them in any given point of the body. Philop. 169, 14 *εἰ δὲ μία ἐφαρμόζει ἑτέρᾳ ἡ τῆς ψυχῆς τῇ τοῦ σώματος καὶ οὐδὲν πλείω τὸ ἐξ ἀμφοῖν, τί κωλύει καὶ πλείους τῆς ψυχῆς στιγμὰς τῇ αὐτῇ στιγμῇ τοῦ σώματος ἐφαρμόσαι; μυρία γὰρ ἀδιαίρετα συντεθέντα μέγεθος οὐ ποιεῖ.* A. regarded this coincidence of distinct points as absurd: see 409 b 4 sqq. It is further probable, in view of 409 b 2, that Philoponus (170, 19—28) and Simplicius (64, 26—34) are right in surmising an absurd consequence to be implied, which follows from this, viz. the possibility on this theory that, all psychical activities being concentrated at a single point of the body, at all other points the body might be virtually inanimate. But, as Simplicius remarks (64, 28), this consequence is not here developed. Cf. 427 a 5 *τόπῳ δὲ καὶ ἀριθμῷ ἀδιαίρετον* [int. *τὸ κρῖνον*].

a 25. **καὶ αὐτά**, int. *ἀδιαίρετά ἐστιν*. Possibly this follows from the conception of *τόπος* as laid down in *Phys.* IV., cc. 1—5. Cf. *Phys.* IV. 4. 211 a 27—9. Each thing is equal in extent to the space it occupies. But axioms which hold for bodies in space can hardly be transferred to soul-units or points. Them. 31, 34 H., 58, 1 Sp. *καὶ αὐτὰ συντιθέμενα διαιρετὸν οὐ ποιεῖ μέγεθος.* According to Simplicius (64, 33) *τόπος* means the single point of the body, *ὡς καὶ πάσας τὰς ψυχικὰς* [int. *στιγμὰς*] *ἐν μιᾷ εἶναι σωματικῇ, ἣν κοινότερον τόπον ἐκάλεσεν ὡς δεκτικὴν ἐκείνων.* Philop. 170, 31 *εἰ γὰρ ὁ τόπος τῶν ἀπείρων στιγμῶν τῆς ψυχῆς τὸ σημεῖόν ἐστι τὸ τοῦ σώματος, τοῦτο δὲ ἀδιαίρετον, καὶ τὰ ἄπειρα δηλονότι σημεῖα τὰ ἐφαρμόσαντα τῷ σημείῳ τοῦ σώματος ἀδιαίρετα ἔσται· ὡς γὰρ ἂν ἔχῃ ὁ τόπος, οὕτω καὶ τὰ ἐν αὐτῷ· ὥστε ἓν σημεῖον ἔσται ἡ ψυχή, καὶ καθ' ἓν σημεῖον ἔμψυχον τὸ σῶμα.*

a 25 **εἰ δ'...27 τὰ σώματα;** *εἰ δὲ* answers *εἰ μὲν* a 21. We now take the other alternative. Suppose (2) that the points in the body are the same as the units

whose sum is the soul. On this view there are not two sets of points. Soul-units and points of body are identical. In the words of 409 b 5, we deny ὅτι διαφέρων τις ἀριθμὸς ἐγγίνεται καὶ ἄλλος τις τῶν ὑπαρχουσῶν ἐν τῷ σώματι στιγμῶν. It follows that all bodies will be animate: the distinction between animate and inanimate disappears.

a 26. ὁ τῶν ἐν τῷ σώματι στιγμῶν ἀριθμός, i.e. πλῆθος, sum-total. Philop. 171, 10 ἐπαναλαμβάνει τὸν λόγον εἰς τὸ σαφέστερον, Simpl. 64, 36 ἢ κάλλιον φάναι τὸν ἀριθμὸν τῶν ἐν τῷ σώματι στιγμῶν εἶναι τὴν ψυχήν.

a 28. καὶ ἄπειροι. Simpl. (65, 2) thinks another absurd consequence implied by the addition of these words. οὐ γὰρ ἐνεργείᾳ ἀλλὰ δυνάμει ἐν τῷ σώματι, εἴπερ ἄρα, αἱ στιγμαί· ἄπειροι δὲ αἱ δυνάμει. διὸ οὐδὲ ἀριθμὸς τὸ ἐξ αὐτῶν πλῆθος (πεπερασμένος γὰρ πᾶς ἀριθμός) πρὸς τῷ καὶ τὴν ψυχὴν δυνάμει ποιεῖν ἀλλ' οὐκ ἐνεργείᾳ ἐν τοῖς ἐμψύχοις.

a 28 ἔτι δὲ πῶς...30 εἰς στιγμάς; Death is the separation of the soul from the body, the ordinary view being taken for granted here as above (408 a 28).

But the sum-total of the points in the body is inseparable from the body, unless, in defiance of geometry, points are asserted to be the elements (μέρη) of which lines are composed and into which accordingly they may be resolved by separation. (If Xenocrates substituted ἄτομος γραμμή for στιγμή, we may perhaps see from *De Caelo* III. 1, 299 a 5—11 how he would have met this objection.) The truth is that points are merely limits (πέρατα) of lines, just as lines are the limits which bound surfaces and surfaces the limits which bound solid bodies. A. believes that these limits are inseparable from that of which they are limits: *Phys.* IV. 4. 212 a 30 ἅμα γὰρ τῷ πεπερασμένῳ τὰ πέρατα, *Metaph.* 1002 b 8—11 ὁμοίως δὲ δῆλον ὅτι ἔχει καὶ περὶ τὰς στιγμὰς καὶ γραμμὰς καὶ τὰ ἐπίπεδα· ὁ γὰρ αὐτὸς λόγος· ἅπαντα γὰρ ὁμοίως ἢ πέρατα ἢ διαιρέσεις εἰσίν, *Metaph.* 1090 b 5 εἰσὶ δέ τινες οἱ ἐκ τοῦ πέρατα εἶναι καὶ ἔσχατα τὴν στιγμὴν μὲν γραμμῆς, ταύτην δ' ἐπιπέδου, τοῦτο δὲ τοῦ στερεοῦ, οἴονται κτέ. Cf. *Top.* VI. 4. 141 b 19—22, *Phys.* VI. 1, esp. 231 a 24 ἀδύνατον ἐξ ἀδιαιρέτων εἶναί τι συνεχές, οἷον γραμμὴν ἐκ στιγμῶν, εἴπερ ἡ γραμμὴ μὲν συνεχές, ἡ στιγμὴ δὲ ἀδιαίρετον (the proof goes on as far as 231 b 10 and holds for any μέγεθος), *De Caelo* III. 1, 299 a 6 ἔπειτα δῆλον ὅτι τοῦ αὐτοῦ λόγου ἐστὶ στερεὰ μὲν ἐξ ἐπιπέδων συγκεῖσθαι, ἐπίπεδα δ' ἐκ γραμμῶν, ταύτας δ' ἐκ στιγμῶν· οὕτω δ' ἐχόντων οὐκ ἀνάγκη τὸ τῆς γραμμῆς μέρος γραμμὴν εἶναι. περὶ δὲ τούτων ἐπέσκεπται πρότερον ἐν τοῖς περὶ κινήσεως λόγοις, ὅτι οὐκ ἔστιν ἀδιαίρετα μήκη, where πρότερον probably refers to *Phys.* VI. 231 a 24, cited above. Xenocrates is also refuted *Phys.* I. 3, 187 a 1—10 (see Simpl. *ad loc.* especially pp. 138, 10 sqq., 140, 6 sqq.), and apparently *Metaph.* 1088 a 15, 1091 a 14, b 35, probably also in some parts of *Metaph.* M., cc. 8 and 9. Xenocrates as a Platonist affirmed the immortality of the soul. See Philop. 171, 16, Theodoret V. 23 [Diels, *Doxogr. Gr.* 392 t[b] 3], Olymp. *in Phaed.* p. 98, Finckh [*Doxogr. Gr.* 539 n[b] 3].

It may be remarked in passing that, if A. has once succeeded in reducing the units (of which according to Xenocrates soul is constituted) to mathematical points, it follows on his own principles that they cannot be moved of themselves καθ' αὑτὰ or independently. See *Phys.* VI. 10, where there is an elaborate proof ὅτι τὸ ἀμερὲς οὐκ ἐνδέχεται κινεῖσθαι πλὴν κατὰ συμβεβηκός. Cf. 241 a 6 sq. But it is highly improbable that either the substitution of points for units or the assumption that the number of the soul must be in space (409 a 6 sq.) would have passed unchallenged by Xenocrates. Cf. A.'s own admission that the ideas are not in space, *Phys.* III. 4, 203 a 9 μηδέ που εἶναι.

CHAPTER V.

409 a 31—b 18. Summary of the objections to the view of Xenocrates. It implies a plurality of points present in one and the same point, just as the corporeal view of soul implies that two bodies occupy the same space [§ 1], and further, on this view as on that of Democritus, the soul causes motion in the body because it is itself in motion [§ 2]. Moreover the theory under criticism is futile, for it gives no insight into the characteristic attributes of soul, such as reason, sense-perception, pleasure and pain [§ 3].

409 a 31. **συμβαίνει δέ.** The division of chapters is here unfortunate and needlessly interrupts the connexion of thought.

a 31. **καθάπερ εἴπομεν**, apparently in 408 b 33 sqq., where, however, it is not the difficulties arising out of the conception of motion, but those connected with the attribution of number to the soul that are said to be peculiar (*ἴδια*). A. is not here presenting a fresh objection to the conception of a self-moving number, but summing up the results of his previous criticisms. He claims (1) that the same consequences follow from that conception as from the theory which regards soul as a body of fine particles. The particular consequence of this kind adduced below is that soul and body occupy the same space (b 2 *εἴπερ*... 4 *ψυχή*). This will follow if the soul is a collection of points no less than if it is a collection of particles. Cf. 409 a 21 sqq. That the reference in *καθάπερ εἴπομεν* is not solely to the opening sentence of the criticism (408 b 32—409 a 1) seems almost certain, for it was only upon subsequent analysis that the conception of number yielded this result, viz., that soul and the body would occupy the same space. Diogenes of Apollonia and Heraclitus seem the best representatives of *οἱ σῶμά τι λεπτομερὲς τὴν ψυχὴν τιθέντες* (405 a 21—29).

a 32. **σῶμά τι λεπτομερές.** This quality was claimed by Diogenes for his element air (405 a 22), and may be presumed to belong to that of Heraclitus: cf. 405 a 27 *ἀσωματώτατον*. The chief representative, however, of this view is Democritus. From 404 b 30—405 a 13 it appears that this particular variety of opinion, viz. that the soul consists of a body of fine particles, might be adopted either by those who regarded soul as the moving principle (*τὸ κινητικόν*) or by those who considered it cognate with the elements, provided they made the elements corporeal. Democritus would come under both heads, a fact which bears upon the question of the genuineness of the words *ἴδιον τὸ ἄτοπον*.

a 32 **τῇ δ'...409 b 1 τὸ ἄτοπον.** A. claims (2) that Xenocrates is involved in an absurdity all his own, though it finds a counterpart in Democritus,—presumably one to which the supporters of the view that soul is a subtle corporeal element, as such, were not exposed. This absurd consequence is developed below (409 b 7—11, with which compare 409 a 10—18). Against Democritus the objection had previously been urged (406 b 15—25). With *κινεῖσθαι* supply *τὸ ζῷον* (cf. 409 b 7). The proper correlative to *ὥσπερ...ψυχῆς* is omitted; it would have been *οὕτως ὑπὸ τοῦ ἀριθμοῦ κινεῖσθαι φάναι* (see below 409 b 7 sq.) if this clause had taken the same form as the preceding, but it is replaced, as the text stands, by *ἴδιον τὸ ἄτοπον*, to be taken as subject of *συμβαίνει*. Cf. 403 a 12 *καθάπερ*, *note*.

409 b 1. **ἴδιον τὸ ἄτοπον.** Torstrik, in an admirable note (p. 126), contends that these words are spurious because (1) the explanation of animal motion impugned was not peculiar to Xenocrates, but was shared by him with Democritus, (2) the words might easily have been interpolated, owing to the construction of the sentence having been misapprehended, an infinitive seeming

to be required after τῇ δέ. It is easy, Torstrik thinks, to supply this by understanding λέγειν κινεῖσθαι. Such an ellipse is very common both in Plato and A. in clauses where a comparison is instituted. The first objection may be met in a way: we may reply that Democritus did not say the animal was moved by the number, and so far the conception of Xenocrates was peculiar to himself. But it is a poor case which admits of no better defence than this.

b 2. **ἐν παντὶ τῷ αἰσθανομένῳ σώματι.** These words mean "in every part of the sentient body," not "in every sentient body." The view is that sensibility is diffused all over the frame, and not lodged in any special part as the brain or the heart.

b 3. **εἰ σῶμά τι,** as assumed by almost all A.'s predecessors excepting Plato and his school: at any rate by *οἱ σῶμά τι λεπτομερὲς τὴν ψυχὴν τιθέντες.*

b 4. **τοῖς δ' ἀριθμὸν λέγουσιν,** int. *τὴν ψυχήν.*

b 5. **πολλὰς στιγμάς,** int. *ἀναγκαῖον εἶναι* as shown 409 a 18—25. **πᾶν σῶμα,** "all body," i.e. everything which is corporeal: not to be taken as in *παντὶ τῷ αἰσθανομένῳ σώματι* just above (409 b 2). The inference was drawn above, 409 a 25 sqq. **ψυχὴν ἔχειν.** See 409 a 27. **εἰ μὴ διαφέρων τις ἀριθμὸς ἐγγίνεται,** i.e. if the number which is the soul be not something other than the sum total of points in the body (*αἱ ἐν τῷ σώματι στιγμαί*, 409 a 25, 6), as A. goes on to explain *καὶ ἄλλος...στιγμῶν.* For *ἐγγίνεται*="supervenes," cf. 408 a 21 *ἐγγίνεται τοῖς μέλεσιν.*

b 7. **συμβαίνει τε.** The particle which, standing alone, is, according to Eucken, *De Ar. Dic. Rat.* p. 13, comparatively rare in *De A.*, joins this new sentence to b 2 *εἴπερ γὰρ...7 στιγμῶν.* *συμβ.* is parallel to *ἀναγκαῖον* (b 3). Cf. 410 b 7.

b 8. **καθάπερ καὶ Δημόκριτον αὐτὸ ἔφαμεν κινεῖν,** viz. 403 b 28 sqq., i.e. "in his theory." On this idiom see note on 405 a 26, **συνίστησιν.**

b 9. **τί γὰρ διαφέρει σφαίρας λέγειν μικράς.** See 409 a 10 sqq. The oxymoron in *μονάδας μεγάλας* is purposely grotesque (see *note* on 409 a 2). If the dimensions of the constituents make no difference at all, by all means let us have "large units" (=points) as well as small spheres.

b 10 **ἀμφοτέρως γάρ...11 τῷ κινεῖσθαι ταύτας,** the round atoms of Democritus or units of Xenocrates: cf. 403 b 24—31, 404 a 5—9. These words show clearly what the objection taken at the beginning of the chapter, 409 a 32 sq., really is. A. had criticised in 409 a 15 sq. the absence of a moving cause for the units of Xenocrates, which is exactly parallel to the complaint he makes against the Atomists. *Metaph.* 985 b 19 *περὶ δὲ κινήσεως, ὅθεν ἢ πῶς ὑπάρχει τοῖς οὖσι, καὶ οὗτοι παραπλησίως τοῖς ἄλλοις ῥαθύμως ἀφεῖσαν.* With **τῷ κινεῖσθαι ταύτας** cf. 403 b 29—31, 406 b 20—22.

b 11. **τοῖς δὴ συμπλέξασιν εἰς τὸ αὐτό.** Cf. 404 b 28 sqq.

b 12. **συμβαίνει.** Cf. *infr.* 410 b 4. *Ind. Ar.* 713 b 38 inde (a concludendi necessitate) *συμβαίνει* usurpatur ubi factis ex aliqua hypothesi conclusionibus ipsa hypothesis refutatur. ita *συμβαίνειν* usurpatur ubi concludendo aliorum philosophorum placita refutantur. Cf. *Metaph.* 989 a 22 and Bonitz *ad loc.*

b 13 **οὐ γὰρ μόνον...14 συμβεβηκός.** Such a theory affords no help in either of the two divisions of our task. Here the point seems to be: "A self-moving number can be no proper description of what soul is, of its essence, nor yet such a characteristic or property of soul as will contribute to a better definition of it." Cf. again 402 b 16 sqq.

b 14. **δῆλον δ' εἴ τις ἐπιχειρήσειεν.** Cf. the phrase *φανερώτατον δ' εἴ τις ἀποδιδόναι πειραθείη* in 408 a 3, where, as here, it is *τὰ πάθη καὶ τὰ ἔργα τῆς ψυχῆς* to which reference is made.

b 16. **λογισμούς**, "processes of reasoning." In *λογίζεσθαι* and its derivatives the chief element is that of calculation. The word *λογισμὸς* is often used, like the English "reflection," to denote what is more precisely expressed by *διάνοια*. Cf. *infr.* 415 a 8, where *λογισμὸς* is explained by *διάνοια*. In *Metaph.* 980 b 28 *λογισμὸς* is co-ordinated with *τέχνη*, as distinguished from *ἐμπειρία*.

b 17. **πρότερον**. It is more probable that the reference is still to 402 b 25—403 a 2 than that it is either to 406 a 26 sq. or 408 a 3 sqq.

b 18. **ἐξ αὐτῶν**, int. *τῶν λεγομένων*. The plural after b 15 *ἐκ τοῦ λόγου τούτου* need cause no surprise. This gives a satisfactory sense: it is not easy even to surmise these attributes of soul (*λογισμοὺς* etc.) from such a definition.

b 19. **τριῶν δὲ τρόπων...ὁρίζονται τὴν ψυχήν**. Cf. *note* on 405 b 11. Of the three modes, two only are given in this sentence. The third is introduced by *λείπεται δέ* (409 b 23). This is obviously the point where a new chapter should have begun.

b 20 **οἱ δὲ σῶμα...21 τῶν ἄλλων**. Here it is quite plain that *ἀσωματώτατον* is another way of saying *λεπτομερέστατον*. The theories of soul which A. has in view make it identical with an *ἀρχὴ* which strictly is not incorporeal at all. In some of these theories the other simple bodies or elements are derived from the *ἀρχὴ* by *σύγκρισις* only. See *Metaph.* 988 b 34 sqq. This mode of *γένεσις* would apply to the air of Diogenes of Apollonia and to the fire of Heraclitus. The Atomists, however (cf. 405 a 11 sqq.), refused to admit any qualitative change in *σῶμα*, but derived all varieties in concrete things from the different shape, order and position of the atoms: Them. 32, 34—37 H., 59, 23—26 Sp., Philop. 175, 5—19, Simpl. 66, 6—18.

409 b 23—411 a 7. The greater part of the chapter [§ 5—§ 16, 409 b 23—411 a 7] is devoted to a criticism of the third theory, which, starting with the functions of perception and knowledge, derives the soul from the elements. On this theory soul knows and perceives because it is compounded of the elements, and it is further assumed that like is known by like. To this it is objected: (1) that the great majority of concrete things are not single elements but compounds [§ 5], and, even if the elements are present in the soul, this is not true of the particular compound or of the formula by which it is determined [§ 6]. (2) Further, applying the scheme of the categories to the term Being, what, we ask, are the elements from which the soul is derived? Are quantity and quality included, as well as substance? If they are not in the soul, how can the soul know them? If they are, the soul must itself be a quantity, quality and substance [§ 7]. (3) Again, if like knows like, it cannot, as Empedocles held, be unaffected by like [§ 8]. (4) On Empedocles' theory the corporeal tissues composed of earth, like hair and sinews, should strictly have perception of their like, i.e. earthy objects, but this is contrary to fact [§ 9]. (5) Empedocles is bound to admit ignorance on a large scale, e.g. the sphere which he calls God cannot know Strife, for in it alone of all things strife is not present [§ 10]. (6) It is a consequence of Empedocles' theory that soul should be found everywhere, for in all things there are present one or more of the elements, and therefore the knowledge and perception which the presence of the elements implies [§ 11]. (7) And yet since these elements are material elements, there is further need of a unifying cause, and this will be the main thing, such superior importance being however inconsistent with the priority which Empedocles ascribes to the elements [§ 12]. (8) The theory under examination, like that which attributes motion to the soul, fails to apply to all forms of soul. Just as plants and some animals are stationary, so plants are devoid of perception, and many animals of reason [§ 13]. (9) Again plants and

some animals do not respire, and so the Orphic theory that soul enters from the external universe in the act of respiration is untenable [§ 15]. (10) Nor is it necessary to compound the soul of all the elements: as the knowledge of contraries is one, it will be sufficient to take one only of a pair of opposite elements [§ 16].

b 23 λείπεται δ' ἐπισκέψασθαι...24 αὐτὴν εἶναι. The criticism of these theories is accompanied by a fuller exposition, for the preceding notice (404 b 8—27) merely established the fact that such views were held by Empedocles and Plato. *πῶς λέγεται* means "in what sense the soul is said" to be "composed of," or "derived from," the elements. The phrase *ἔκ τινος εἶναι*, which has many meanings, would bear either interpretation. See *Metaph.* Δ., c. 24; also 1044 b 24 sqq., 1092 a 23 sqq. One main distinction is that sometimes the elements remain in the product or derivative (*ἔκ τινος ὡς ἐνυπάρχοντος*), sometimes they do not (*ἔκ τινος μὴ ἐνυπάρχοντος*). Thus by *μεῖξις* a compound is generated quite distinct from its components. So Plato, *Tim.* 35 A, B: the compound soul is quite distinct from its elements, Same, Other, Being, just as Being is distinct from Same and Other. So, too, bone is a wholly different substance from the earth, water and fire, of which, according to Empedocles, it is compounded (410 a 2 sqq.).

b 24. λέγουσι μὲν γάρ, int. *τὴν ψυχὴν ἐκ τῶν στοιχείων εἶναι.* **ἵν' αἰσθάνηταί τε τῶν ὄντων καὶ ἕκαστον γνωρίζῃ,** int. *ἡ ψυχή*. Here again, as above 409 b 8 (*Δημόκριτον αὐτὸ ἔφαμεν κινεῖν*), must be understood "according to the theory." They put forward the theory, not, of course, in order that the soul may perceive reality, but in order that its perception of reality and knowledge may be explained.

b 25 συμβαίνειν...26 τῷ λόγῳ, int. *ὃν λέγουσιν* (or *ποιοῦνται*), the theory which they put forward.

b 26 τίθενται γάρ...27 τὰ πράγματα τιθέντες. The assumption underlying all these views is that like knows like. See for Empedocles 404 b 13—15, for Plato 404 b 17, for Diogenes of Apollonia 405 a 23, for Heraclitus 405 a 27 sqq., and generally of all theories of this kind 405 b 13—19. If the soul consists of the elements, it will be capable of knowing all things: Them. 33, 4 H., 60, 3 Sp. *διὰ τοῦτο ποιοῦσιν αὐτὴν ἐκ τῶν στοιχείων, οἰόμενοι πάντα αὐτὴν οὕτω τὰ πράγματα γνωριεῖν.* As A. puts it, they supposed that the assumption "like knows like" involved the identification of the soul with all the things which it knows. Cf. for *πράγματα* 404 b 18, 25, 27.

b 28. οὐκ ἔστι δὲ μόνα ταῦτα. Grammatically *ταῦτα* should refer to *τὰ πράγματα*, which is impossible. It must be *τὰ στοιχεῖα* mentioned 409 b 23, 24. *ἔστι* is a verb of complete predication = exists.

b 29. τὰ ἐκ τούτων = *τὰ ἐκ τῶν στοιχείων*, the things compounded of the elements. The argument is this: You have to account for the fact of the perception by soul of e.g. rocks, trees, animals, all of which, even if regarded as merely modifications of an assumed first principle or principles, are certainly, in their present state, dissimilar from it, and therefore, *ex hypothesi*, from soul itself: Them. 33, 5 H., 60, 4 Sp. *εἰ μὲν οὖν τὰ στοιχεῖα μόνα ἦν τὰ ὄντα, καλῶς· νῦν δὲ πολλῷ πλείω τὰ ἐκ τῶν στοιχείων.*

b 30. ἔστω = *ἐξέστω*. The imperative is an emphatic concessive, "licet," cf. *Metaph.* 1077 b 1.

b 31. σύνολον. The concrete whole is A.'s favourite term for a particular individual thing, e.g. Callias is such a whole, in which soul as form and body as matter are united. For the form of the word cf. *συναμφότερον*. On the theory of Empedocles such concrete things are compounds of his four elements (410 a 1 *σύνθετα*).

410 a 1. οὐ γὰρ ὁπωσοῦν, non qualibet ratione, not if taken at random, in any casual way. **τὰ στοιχεῖα τούτων ἕκαστον**, int. *ἐστί*. By *τούτων* are meant the compounds or derivatives.

a 2. ἀλλὰ λόγῳ τινὶ καὶ συνθέσει. The dative is causal, "in virtue of a definite ratio and arrangement," i.e. it is because the elements are combined in certain proportions and arranged in a certain way that each concrete thing comes to be: *Metaph.* 1042 b 25—31. See also the second *note* on 408 a 24. Cf. below 410 a 8 and 407 b 32 sq., 408 a 6 sqq. with *notes*. In c. 4 *λόγος τῆς μείξεως* and *σύνθεσις* are treated as exclusive rather than as complementary. In 408 a 18—23, the section which deals with Empedocles, *λόγος* (int. *τῆς μείξεως*) only is mentioned. However, in 408 a 24 *μεῖξις* apparently stands for both modes of combining, when the parts combine without alteration, as well as when their distinctive character is lost by their being fused or blended in the new whole. Here also, as bone is an example and *καὶ* explicative, *σύνθεσις* must include the latter mode as well as the former, cf. *De Caelo* III. 2, 300 b 25—30.

a 3. Ἐμπεδοκλῆς. This passage, *frag.* 96 D [211—214 K], is quoted also by Simplicius *in Phys.* II. 2, p. 300, 21 sqq., who gives the further line *Ἁρμονίης κόλλῃσιν ἀρηρότα θεσπεσίηθεν* and for *εὐστέρνοις* of our text substitutes *εὐτύκτοις*. Reference is made in *Metaph.* 993 a 17 sq. to the passage for the same purpose as here, viz. to show that the composition of bone is determined by the proportions subsisting between its constituent elements.

a 4. χοάνοισιν. Empedocles is apparently thinking of the hollows of the earth, where in geologic ages, as we should say, he must have imagined bones, like other tissues, to have been gradually formed when the reign of Strife was over. Cf. Simpl. 68, 8 '*χόανα*' *δὲ καὶ παρὰ τῷ ποιητῇ* (Hom. *Il.* XVIII. 470), *ἐν οἷς ἡ τῶν μιγνυμένων γίνεται κρᾶσις, ἀγγεῖα...ἃ καὶ* '*εὔστερνα*' *ὡς πλατέα διὰ τὸ χωρητικὸν καλεῖ*, Philop. 177, 32—178, 1.

a 5. νήστιδος αἴγλης. These words have caused some perplexity. From *frag.* 6, 3 D [57 K] of Empedocles we gather that *Νῆστις*, like *Ζεύς*, *Ἥρα* and *Αἰδωνεύς*, was a personification of one of the elements, viz. elemental water or moisture. It seems impossible that *αἴγλης* should, as M. Tannery supposed (*Pour l'histoire de la science hellène*, p. 333), be an adjective = *αἰγληέσσης*: and though *νήστιδος* might quite possibly be an adjective, it is more probably a substantive here as in the other passage. There is, however, no difficulty in taking it as genitive dependent on *αἴγλης*, "brightness of water" is parallel to *ἶς ἀνέμοιο*. Simpl. and Philop. strangely understand two elements, air and water, to be meant, each contributing one eighth: Simpl. 68, 10 *μίγνυσι δὲ...ἐν μὲν ἀέρος ἐν δὲ ὕδατος· ἃ δὴ ἄμφω* '*νῆστιν αἴγλην*' *προσαγορεύει, νῆστιν μὲν διὰ τὸ ὑγρὸν ἀπὸ τοῦ νάειν καὶ ῥεῖν, αἴγλην δὲ ὡς διαφανῆ*, Philop. 178, 1—4.

a 7 οἱ λόγοι...8 καὶ ἡ σύνθεσις. Cf. 410 a 2. The combining proportions are as necessary to knowledge as the materials combined. In his own technical language A. would say that for knowledge the formal cause is as important as the material cause, since we know a thing only when we know its causes. Cf. *Metaph.* 983 a 24 sqq., 993 a 15—22, *De Part. An.* I. 1, 642 a 18—28.

a 8. γνωριεῖ γὰρ ἕκαστον, int. *τῶν ἐν τῇ ψυχῇ στοιχείων* [this is the subject], *τὸ ὅμοιον τὸ ἐν τοῖς πράγμασιν* [this is the object].

a 9. οὐθέν, int. *γνωριεῖ*. *οὐθὲν* is the subject. There will be nothing in the soul to cognise concrete things. **εἰ μὴ καὶ ταῦτ' ἐνέσται.** That *ταῦτα* = bone and man is clear from what follows. The elements being supposed in the soul, the addition of *οἱ λόγοι καὶ ἡ σύνθεσις* (410 a 8) is required to convert them into particular things.

a 11. εἰ ἔνεστιν ἐν τῇ ψυχῇ λίθος. Cf. 431 b 29. Some such crude assump-

tion is at the basis of the earlier theories of perception. The pores of Empedocles are channels intended to facilitate the entrance of emanations, ἀπορροαί, from the object perceived. So, too, Democritus explained all perception by images (δείκελα = εἴδωλα) given off by the object and conveyed through the body to the equally material soul.

a 12. τὸν αὐτὸν δὲ τρόπον, int. ἔχει. From instances of concrete things (οὐσίαι) A. passes to qualities, or instances of *τὰ καθόλου*. He might have gone on to quantities, relations and the other appendages of substance.

a 13. ἔτι δὲ πολλαχῶς λεγομένου τοῦ ὄντος. It was conceded at 409 b 29 that the soul knows *ἐξ ὧν ἐστὶ τὰ πράγματα*. But do such elements exist? and what are they? The distinction of the categories is ultimate for A., and there can be no principles or elements common to them all.

a 14. σημαίνει γάρ, int. τὸ ὄν. Cf. *Metaph.* 1017 a 7, 22—24. See *note* on 402 a 23 **τῶν γενῶν**.

a 15. πότερον ἐξ ἁπάντων ἔσται ἡ ψυχὴ ἢ οὔ; Are we to say that the soul is composed of, or derived from, all of these or not?

a 16. ἀλλ' οὐ δοκεῖ κοινὰ πάντων εἶναι στοιχεῖα. This is A.'s own conviction, frequently expressed. Cf. *Metaph.* 992 b 18—993 a 10, 1070 a 31—b 10, 1088 a 22—34. Similarly, there are no common principles from which all truth can be deduced, *Anal. Post.* I. 32, 88 a 36 *ἀλλ' οὐδὲ τῶν κοινῶν ἀρχῶν οἷόν τ' εἶναί τινας, ἐξ ὧν ἅπαντα δειχθήσεται.*

a 17. ἆρ' οὖν ὅσα τῶν οὐσιῶν, int. *στοιχεῖά ἐστιν*. Vahlen, *Beiträge* IV. 419, *De arte poetica*[3], p. 271, explains differently, He compares *ὅσα τῶν οὐσιῶν* with his own readings of *Poet.* 1461 a 27 *ὅσα τῶν κεκραμένων* = all mixed drinks, and *Rhet.* II. 8, 1386 a 5 *ὅσα τε γὰρ τῶν λυπηρῶν καὶ ὀδυνηρῶν*. For the partitive genitive used predicatively see *note* on 402 a 1. *Ind. Ar.* 149 b 2 sqq. cites *Pol.* 1339 a 18 *ταῦτα γὰρ καθ' αὑτὰ οὔτε τῶν σπουδαίων, ἀλλ' ἡδέα.* I know no example introduced by *ὅσα*, for those which Vahlen (IV. 419, cf. *Beiträge* II. 271) supposed that he could adduce, viz. *Rhet.* II. 8, 1386 a 5, *Poet.* 25, 1461 a 27 quoted above, are elusive, as they rest upon his own emendation or manipulation of the text, in which subsequent editors decline to follow him. **ἐκ τούτων μόνον**, int. *ἔσται ἡ ψυχή*: or, as Them. (33, 31 H., 61, 9 Sp.) puts it more briefly, *ἐκ μόνης τῆς οὐσίας* (int. *ἡ ψυχή ἐστι*). The first category, substance, is contrasted with all the rest. Let us suppose, then, that the elements in the soul are the elements of substances only. To this the reply is that the soul will in that case know substance but will not know any of the other categories. **πῶς οὖν γινώσκει**, int. *ἡ ψυχή*. It will be impossible for the soul, which has in it the elements of substance only, to know the other categories.

a 18 ἢ φήσουσιν...19 συνεστάναι. To escape from the last conclusion the advocates of the theory must admit that the elements of which the soul is composed include the elements of the other categories besides those of substance.

a 20. ἔσται ἄρα ποσὸν καὶ ποιὸν καὶ οὐσία, int. *ἡ ψυχή*. Then these elements of which the soul consists will include quantity, quality and substance; presumably also, although A. does not say so, *ἴδιαι ἀρχαί* of the other categories.

a 20 ἀλλ' ἀδύνατον...21 μὴ ποσόν. If the elements of soul are elements of quantity, the soul of which they are the elements will be quantity, not substance. The refutation is so elliptical that the final steps are uncertain. It may be left for us to infer similarly that soul is quality and not quantity or substance, and again that it is substance and not quality or quantity, it being impossible to reconcile these inferences. Belger, by transposition, made the final step the preceding sentence, hence the soul will be [at the same time] quantity, quality and substance. A. of course holds the soul to be *οὐσία*. He might fairly argue that

those who made it σύνθετον ἐκ τῶν στοιχείων held the same. Cf. *Metaph.* 1029 a 15 sq. τὸ γὰρ ποσὸν οὐκ οὐσία· ἀλλὰ μᾶλλον ᾧ ὑπάρχει ταῦτα πρώτῳ, ἐκεῖνό ἐστιν ἡ οὐσία.

a 21. τοῖς δ' λέγουσιν ἐκ πάντων, int. τῶν στοιχείων εἶναι τὴν ψυχήν.

a 23. τὸ φάναι μὲν ἀπαθὲς εἶναι τὸ ὅμοιον ὑπὸ τοῦ ὁμοίου. μὲν is displaced, for αἰσθάνεσθαι δὲ is also dependent upon φάναι: *Ind. Ar.* 454 a 20 μέν interdum non ei additur vocabulo, in quo vis oppositionis cernitur. The physical doctrine that like cannot act upon like (cf. 416 a 32) is mentioned *De Gen. et Corr.* I. 7, 323 b 1 περὶ δὲ τοῦ ποιεῖν καὶ πάσχειν λεκτέον ἐφεξῆς. παρειλήφαμεν δὲ παρὰ τῶν πρότερον ὑπεναντίους ἀλλήλοις λόγους. οἱ μὲν γὰρ πλεῖστοι τοῦτό γε ὁμονοητικῶς λέγουσιν, ὡς τὸ μὲν ὅμοιον ὑπὸ τοῦ ὁμοίου πᾶν ἀπαθές ἐστι διὰ τὸ μηδὲν μᾶλλον ποιητικὸν ἢ παθητικὸν εἶναι θάτερον θατέρου...τὰ δ' ἀνόμοια καὶ τὰ διάφορα ποιεῖν καὶ πάσχειν εἰς ἄλληλα πέφυκεν. This was the opinion of Empedocles, who made his four elements qualitatively different and (unlike A.'s four ἁπλᾶ σώματα) immutable. The opposite view, viz. that like acts upon like, was held by the Atomists, who recognised no qualitative distinctions in matter, i.e. in the atoms, *ib.* 323 b 10—15 Δημόκριτος δὲ παρὰ τοὺς ἄλλους ἰδίως ἔλεξε μόνος κτέ. Though Theophr. *De Sensibus* § 49 (*Doxogr. Gr.* 513, 10—15) professes to doubt whether they explained sensation τοῖς ἐναντίοις ἢ τοῖς ὁμοίοις, the latter assumption is the true one, and is confirmed by Theophr. himself, § 50, where in an abstract of the theory of vision according to Democritus he reports him as saying: τὰ γὰρ ὁμόφυλα μάλιστα ἕκαστον γνωρίζειν. In fact, both Democritus and Anaxagoras (405 b 14, 19), though taking opposite sides, were consistent in applying their theory of physical change to the particular case of perception: the former said like acts upon like and like is known by like; the latter said that which acts is unlike that which is acted upon, and that which is known is unlike that which knows. Empedocles, like all the rest, is open to the charge of inconsistency. The two conflicting views reappear in the discussion of nutrition, 416 a 29—b 9.

a 24. αἰσθάνεσθαι. For perception it is enough to refer to 404 b 13 γαίῃ μὲν γὰρ γαῖαν ὀπώπαμεν κτέ. **γινώσκειν**, int. τὸν γινώσκοντα. For knowledge the instrument, τῷ ὁμοίῳ, is probably the soul. Cf. above 409 b 26 with *note.*

a 25 τὸ δ' αἰσθάνεσθαι...26 καὶ γινώσκειν. Here, and in the similar passages 424 a 1, 427 a 20, 429 a 14, the question arises whether the indefinite τι is in agreement with the infinitive taken as a noun, or is the accusative governed by πάσχειν. The former construction is preferred by some editors in *Eth. Nic.* 1142 a 31 τὸ γὰρ βουλεύεσθαι ζητεῖν τι ἐστίν. But the evidence of 424 b 16, 17 seems to me decisive in favour of the alternative view, at least here and in 424 a 1: cf. also 408 b 23. The difference of construction hardly affects the meaning, "to suffer something" being obviously "a mode of suffering." The common view was that in sensation the percipient is passive. A. starts from this in his own discussion (II., c. 5). There is little evidence as to the opinion of Empedocles about knowledge, but he doubtless assimilated it to sense-perception: see Theophr. *De Sensibus* §§ 10, 11 [*Doxogr. Gr.* 502, 7 sqq.].

a 28. ὡς τοῖς σωματικοῖς στοιχείοις ἕκαστα γνωρίζεται. Empedocles makes the corporeal elements present in living things the instruments of cognition (in the verses cited 404 b 13—15). Cf. 427 a 26—29.

a 29. καὶ πρὸς τὸ ὅμοιον, an amplification or correction of τοῖς σωματικοῖς στοιχείοις = "with reference to its like," "by the standard of likeness." Torstrik (p. 128) thinks the words corrupt. Non advocanda sunt quae 416 b 10 leguntur ὥστε καὶ ἡ τροφὴ πρὸς ἔμψυχόν ἐστιν: alia enim eius loci ratio. Revocavi igitur in quo universus locus versatur καὶ τῷ ὁμοίῳ τὸ ὅμοιον: (cf. etiam b 1 ὥστε οὐδὲ

τῶν ὁμοίων). He cites Philop. 180, 20, 26, Sophonias 34, 5 as favouring his view. This conjecture gives a satisfactory sense. Attempts have been made to connect the words with μαρτυρεῖ. Some consider πρὸς adverbial, but this is not probable, as in such cases ἔτι is joined with πρός: cf. 407 b 3, *Top.* IX. 4, 166 a 35. Even then καὶ after the genitive absolute presents an insuperable difficulty. If we shrink from adopting Torstrik's restoration (for Philoponus and Sophonias may after all be paraphrasing our present text when they write ἕκαστα γνωρίζεται καὶ τῷ ὁμοίῳ [Philop. ὑπὸ τοῦ ὁμοίου] τὸ ὅμοιον), then it seems worth considering whether πρὸς τὸ ὅμοιον cannot be taken adverbially like e.g. πρὸς τὸ βέλτιστον.

a 29. μαρτυρεῖ τὸ νῦν λεχθέν. Haec esse corrupta facile apparet. Lacuna infuit, quam male suppleverunt additis μαρτυρεῖ τὸ νῦν λεχθέν, quasi praecederet πολλὰς δ' ἀπορίας ἔχειν τὸ λέγειν, non ἔχοντος τοῦ λέγειν (Torstrik). It is at least questionable whether the genitive absolute might not serve as well as the infinitive on the analogy of ὡς ὧδ' ἐχόντων τῶνδ' ἐπίστασθαί σε χρή. Torstrik continues: Accedit quod nova prorsus ratio additur 30. ὅσα γάρ ἐστιν κτέ., de qua nondum dictum est. Τὸ λεχθὲν vero non significare τὸ λεχθησόμενον, quamvis id velint interpretes graeci, nec licere τὸ λεχθησόμενον corrigere, id quod quidam faciunt libri scripti [T et corr. Uy], non est quod dicam. Probably, when he began the sentence, a 27, A. intended to contrast the many difficulties already mentioned with some still greater one to come, but the sentence was left unfinished, because before he had reached this difficulty another minor difficulty occurred to him and he plunged a 30 sqq. into a digression from which he never emerged. As to νῦν, a modern reader cannot pretend to the same linguistic appreciation as the ancients. We find, *De Part. An.* I. 1, 639 b 6, τὸ νῦν ῥηθησόμενον, but with the aorist it would seem at least as obvious to explain νῦν = νῦν δή, "what was just said" (cf. 432 a 28), as to resort to the explanation of Philoponus 180, 23 τὸ γὰρ νῦν λεχθὲν φησιν ἀντὶ τοῦ τὸ λεχθησόμενον, and Simplicius 70, 8 ἐν δὲ τῇ λέξει τὸ μαρτυρεῖ δὲ τὸ νῦν λεχθὲν ἀντὶ τοῦ λεχθησομένου ἀποδεκτέον, ὡς δηλοῖ ἐπιφερόμενος ὁ γὰρ σύνδεσμος αἰτιολογικὸς ὤν. Belger's idea that what follows is μαρτυρία and not argument is wholly unfounded.

a 30. ἐστιν...γῆς, "consist of earth": genitive of material. Cf. 405 a 10, 435 a 25, b 1, 3. **ἁπλῶς,** i.e. "without admixture of other elements."

410 b 1. ὥστ' οὐδὲ τῶν ὁμοίων, int. αἰσθάνεσθαι δοκεῖ.

b 2. προσῆκεν, i.e. if Empedocles' theory were true. Them. (34, 10 H., 62, 1 sq. Sp.) paraphrases καίτοι προσῆκε τῶν γοῦν ὁμοίων ταῦτα αἰσθάνεσθαι.

b 4. πάντα γὰρ τἆλλα, int. ἀγνοήσει. **συμβαίνει δ' Ἐμπεδοκλεῖ.** See *note* on 409 b 12. Cf. *Metaph.* 1000 b 3 sqq., where the same objection is raised to the theory of Empedocles.

b 5. τὸν θεόν, i.e. τὸν σφαῖρον, Emp. *frag.* 17, 7 D [94 K], 27, 4 D [60 K]. When the work of the attractive force, φιλία, is completed, all things are united except Strife, the force of repulsion, which has been completely banished. Cf. Emp. *frag.* 35, 3 D [167 K].

b 6. ἓν goes closely with τῶν στοιχείων. **τὰ δὲ θνητὰ πάντα,** int. γνωρίζει. τὰ θνητὰ is the subject and πάντα, if I mistake not, is accusative, int. τὰ στοιχεῖα. **ἐκ πάντων γὰρ ἕκαστον.** Both the moving forces, Love and Strife, as well as the four elements, are thus represented as στοιχεῖα of every living being. Cf. *supra* 404 b 13—15. With ἕκαστον supply τῶν θνητῶν. It should be noted that inanimate objects are not included: things which have life are also subject to death (θνητά). Them. 34, 15 H., 62, 9 Sp. τὰ δὲ ζῷα καὶ θνητὰ πάντα τῷ πάντων μετέχειν ἅπαντα γνωριεῖ. We have no means of testing this statement. It may be A.'s own inference from the fact that, unless all the elements were present in animate beings, they would be deprived in part of cognition. As Torstrik remarked,

that the argument requires is such a clause as this: *τὰ δὲ θνητὰ πάντα καὶ τοῦ νείκους μετέχει.* Cf. *Metaph.* 1000 a 28 *ἅπαντα γὰρ ἐκ τούτου* [int. *τοῦ νείκους*] *τἆλλά ἐστι πλὴν ὁ θεός.*

b 9. ἀναγκαῖον γάρ ἐστιν ἕν τι γινώσκειν. The subject is *πᾶν* in the sense of every single thing, *ἕκαστον τῶν ὄντων.*

b 11. αὐτά, int. *τὰ ὄντα.* With this argument compare *infra* 411 b 5 sqq.

b 11. ὕλῃ. This term is here used in A.'s own peculiar sense of "material cause" which, since matter with him always implies its correlative, form, at once suggests another and higher cause (*κυριώτατον...κρεῖττον*).

b 12. ἐκεῖνο τὸ συνέχον, i.e. that other unifying cause, *τὸ ἑνοποιοῦν,* just mentioned as needing to be determined. Cf. 416 a 6, where it is objected to Empedocles that, in his mechanical explanation of the growth of plants, he has neglected to provide any unifying principle, *τὸ συνέχον.*

b 13. ἄρχον. This reflects *κυριώτατον.* The principle of which we are in search may be said to control or govern the material elements. Cf. *Pol.* 1254 a 34 *τὸ δὲ ζῷον πρῶτον συνέστηκεν ἐκ ψυχῆς καὶ σώματος, ὧν τὸ μὲν ἄρχον ἐστὶ φύσει τὸ δ' ἀρχόμενον.*

b 14. τοῦ νοῦ, int. *εἶναί τι κρεῖττον καὶ ἄρχον.* This is said from the standpoint of A., who distinguishes between *ψυχή* and *νοῦς,* unlike some of his predecessors. Cf. 404 a 27 sq.

b 15. τὰ δὲ στοιχεῖά φασι πρῶτα τῶν ὄντων εἶναι, whereas they, i.e. Empedocles and philosophers like him, ignore the superior claims of mind and give the priority to their elements. For Empedocles these *στοιχεῖα* are the four material elements and the two moving causes, Love and Strife. As elements of all that exists, they are elements of *νοῦς.* Them. 34, 23 H., 62, 19 Sp. *οἱ δὲ οὐκ αἰσχύνονται καὶ τοῦ νοῦ τὰ στοιχεῖα ποιοῦντες στοιχεῖα.*

b 16 πάντες δὲ...411 a 2 ὑπειληφότας. A. now objects that not only Empedocles and philosophers like him, but also those who like Democritus explain soul as the moving principle, and even the authors of the Orphic cosmogony, have had a wholly inadequate and imperfect conception of soul through confining their attention to animals, indeed to certain species of animals, while ignoring other animals and plants altogether. From his own more advanced position as a naturalist, who has completed a survey of the animal and vegetable kingdoms, he is dissatisfied with the hasty generalisations of his predecessors on the vital principle. The objection was foreshadowed 402 b 3 sqq. Here, however, A. points to particular species of soul, the soul of the plant and of the stationary animal, which the definitions of the soul as cognitive or as a motive principle do not satisfy.

b 17. ἐκ τῶν στοιχείων, int. *εἶναι.* **οἱ τὸ κινητικώτατον,** int. *τὴν ψυχὴν λέγοντες εἶναι.*

b 19. φαίνεται γὰρ εἶναι. *Ind. Ar.* 808 b 46 haud raro *φαίνεσθαι* c inf perinde ac cum part significat 'apparere, apertum esse.' Cf. 410 b 22 sq., 411 b 19. Bonitz cites 414 a 24 (which is not so clear a case), *Eth. Nic.* 1165 a 18, 1123 b 22.

b 19 μόνιμα...20 κατὰ τόπον. These stationary animals recur 413 b 2 sq., 415 a 6 sq., 432 b 19 sqq., 434 b 2, 4. Those with which A. was acquainted lived in the water, e.g. *ὀστρακόδερμα* and the *ἀκαλήφη* or sea-nettle: *Hist. An.* I. 1, 487 b 6—8, VIII. 1, 588 b 7—17, IX. 37, 621 b 2—5, *De Part. An.* IV. 5, 681 b 34 sq., IV. 7, 683 b 4—11.

b 20. ταύτην μόνην τῶν κινήσεων κινεῖν ἡ ψυχὴ τὸ ζῷον. *Ταύτην* = *τὴν κατὰ τόπον, πορευτικήν* (432 b 13, 14). The verb here takes a cognate accusative of the motion imparted as well as an accusative of the thing moved. Cf.

406 a 31, *note*, 432 a 17. The argument is well put by Them. 34, 29—35, 2 H., 62, 29—63, 12 Sp. If, he says, the soul is *τὸ κινητικόν*, and yet some animals are devoid of locomotion, either they must be pronounced *ἄψυχα* or we must enquire why they cannot change their place, though they grow, are nourished, and have sensation. Them. continues 34, 34 H., 63, 6 Sp. *καίτοι ταύτας μὲν τὰς κινήσεις, λέγω δὲ τὴν αὔξησιν καὶ τὴν αἴσθησιν, εἰ καὶ κινεῖται ὡς ἔμψυχα, ἀλλ' οὐχ ὑπὸ μόνης τῆς ψυχῆς, ἀλλὰ συναίτια γίνεται αὐτοῖς καὶ τὰ ἔξωθεν, τοῦ μὲν τρέφεσθαι τὰ τρέφοντα, τοῦ δὲ αἰσθάνεσθαι τὰ αἰσθητά· τῆς δὲ κατὰ τόπον κινήσεως ἡ ψυχὴ μάλιστα κυρία εἶναι δοκεῖ.* Trend. (p. 236) thought that Them. read *μόνη*, arguing no doubt from *ὑπὸ μόνης τῆς ψυχῆς*, but Them.'s antithesis between *ταύτας μὲν τὰς κινήσεις* and *τῆς δὲ κατὰ τόπον* is really quite as strong evidence for his having read *μόνην*. Nor can it be conceded to Trend. that *μόνη* suits the context any better than *μόνην*: cf. *Phys.* VIII. 9, 265 b 34—266 a 5, cited above, p. 211.

b 21 **ὁμοίως δὲ...22 ποιοῦσιν**, int. *οὐ περὶ πάσης λέγουσι ψυχῆς*: in other words, as Them. (35, 4 H., 63, 15 Sp.) puts it, *ἀμελοῦσι τῆς φυτικῆς*, they overlook the vegetative soul which is the only principle of life in plants. Having illustrated his point as regards those who define soul as "the moving principle," A. now returns to prove it of those who define soul as "the cognitive principle," and therefore derive it from the elements of things.

b 23. **τά τε φυτὰ ζῆν.** On the soul of plants v. *infra* 411 b 27 sqq., 413 a 25—31, b 7 sq., 16, 414 a 32 sq., 424 a 32 sqq., 434 a 25—30.

b 24. **διάνοιαν οὐκ ἔχειν.** Cf. 415 a 7—11, 427 b 13 sq. In 404 b 5 sq. it is *ὁ κατὰ φρόνησιν λεγόμενος νοῦς* which is said to be frequently absent.

b 24. **εἰ δέ τις καὶ ταῦτα παραχωρήσαι.** The verb is rare. Them. and Simpl. explain it by *συγχωρεῖν*. *Ταῦτα* may refer to what precedes or to what follows; in either case the effect of the concession must be expressed in b 25 *καὶ θείη...* 26 *αἰσθητικόν*, i.e. if we make intellect one part of the soul and sensation another. What exactly is the view thus obtained? Trend.: Quis sit, qui omni animae mentem tanquam partem tribuit, non facile est definire. Them., after supplying *Ἀναξαγόρᾳ* with *συγχωρήσειεν*, decides for Empedocles (35, 11 H., 63, 25 Sp.): *οὕτω γὰρ ἂν δόξειεν ὑπολαμβάνειν καὶ ὁ οὕτω λέγων 'ἤδη γάρ ποτ' ἐγὼ γενόμην κούρη τε κόρος τε | θάμνος τ' οἰωνός τε,'* Emp. *fr.* 117 sq. D [380 sq. K]. Simpl. (72, 2 sq.) also alludes to Empedocles and the Pythagoreans as investing irrational things with rational souls. It is just conceivable that *παραχωρεῖν* = "not insist upon," i.e. cease to press these cases, and *ταῦτα* would then be the cases of plants which live and of those animals which have not *διάνοια*.

b 25 **τὸν νοῦν...26 τὸ αἰσθητικόν**: Them. 35, 10 H., 63, 22 Sp. *τὸν νοῦν ἐνυπάρχειν ἁπάσῃ ψυχῇ...καὶ πᾶσαν εἶναι ψυχὴν ἐκ πασῶν τῶν δυνάμεων*, Simpl. 72, 4—6. This kind of soul with (1) a rational, (2) a sensitive (acc. to Simpl. also a locomotive) faculty would be found, on this view, in every living thing.

b 26. **καθόλου περὶ πάσης.** Pleonasm: cf. 424 a 17, *Metaph.* 1037 a 22 *καθόλου περὶ παντὸς [τοῦ τί ἦν εἶναι] εἴρηται*, *Phys.* VIII. 8, 264 a 21 *καθόλου μᾶλλον περὶ πάσης κινήσεως*, 265 a 8 *καθόλου περὶ πάσης κινήσεως*.

b 27. **οὐδὲ περὶ ὅλης οὐδεμιᾶς.** Because, as will be shown in II., c. 3, the various faculties or forms of soul are not independent, the higher always presupposing the lower. If the view impugned be that described in *note* on b 25, it obviously omits A.'s *θρεπτικόν*, and consequently, in his view, fails properly to explain *αἰσθητικὸν* and *νοῦς*.

b 28. **ἐν τοῖς Ὀρφικοῖς ἔπεσι καλουμένοις.** This expression conveys a doubt as to the authenticity of the poem. Cf. *De Gen. An.* II. 1, 734 a 19, Cic. *de Nat.*

Deor. I. § 107 Orpheum poetam docet Aristoteles nunquam fuisse, Bernays, *Die Dial. d. Arist.* p. 96. So Iamblichus, following A., ap. Stob. *Ecl. Phys.* I. 366, 17 sqq. W., 868 H. Cf. Lobeck, *Aglaoph.* p. 348 sq., and on the Orphic literature generally see O. Kern, *De Orphei Epimenidis Pherecydis Theogonis quaestt. critt.*, Gomperz, *Greek Thinkers*, E.T., Book I., cc. II., p. 80 sqq., V., p. 123 sqq., p. 537 sqq., 545 sqq.

b 29. ἐκ τοῦ ὅλου, i.e. the universe. Cf. *infra* 411 a 7. **εἰσιέναι ἀναπνεόντων.** Them. (35, 18 H., 64, 5 Sp.) takes this to mean "at birth": *φησὶ γὰρ τῆς ψυχῆς μεταλαμβάνειν τὰ ζῷα παρὰ τὴν πρώτην ἀναπνοήν.* But the more natural meaning would seem to be "every time they breathe."

411 a 1. εἴπερ μὴ πάντα ἀναπνέουσιν. A. believed that fishes do not breathe. He was not aware of the true function of their gills. Cf. 420 b 9—13.

a 2 εἴ τι δεῖ...3 ἁπάντων: a fresh argument directed solely against those who derived the soul from the elements.

a 3. θάτερον μέρος τῆς ἐναντιώσεως. Here *ἐναντίωσις* signifies "a contrariety," i.e. a pair of contraries. Cf. 405 b 23, *note.* Also *Metaph.* 1004 b 26—1005 a 8. Most of A.'s predecessors assumed contraries as their principles. See *Metaph.* 1004 b 29 cited ad 405 b 23: also 1075 a 27—30.

a 4. ἑαυτό τε κρίνειν καὶ τὸ ἀντικείμενον. This follows from A.'s well-known principle, which is also Platonic, that the knowledge of contraries is one and the same. Cf. 427 b 5, *note.* He who knows hot (sometimes assumed as an element) will know the negation of hot, i.e., A. would argue, its contrary, cold: but, unless the two contraries are related as *ἕξις* and *στέρησις* (*Metaph.* 1004 b 26 *ἔτι τῶν ἐναντίων ἡ ἑτέρα συστοιχία στέρησις*), which is not always the case, this argument is fallacious, as Simpl. points out (72, 24—73, 1). See *Metaph.* 1055 b 14 sqq. By the carpenter's rule we shall only know what is circular as not straight, exactly as we should know what is straight to be non-circular if we applied to it a circular rule. A. uses *κρίνειν* for the strictly cognitive function both of perception and thought. See 424 a 5, 426 b 10, 428 a 3. This function is the link which connects sense with thought: 427 a 18 *νοεῖν καὶ κρίνειν καὶ αἰσθάνεσθαι.* The result in either case is a judgment or proposition which may be true or false, 428 a 3 sq., 430 a 27 sqq., 432 a 11 sq.

a 6. ὁ κανών. Cf. *Rhet.* I. 1, 1354 a 26, *Metaph.* 998 a 3, *Eth. Nic.* 1113 a 33, 1137 b 30 sq.

411 a 7—26. To the kindred theory that soul is intermingled with the whole universe it may be objected (1) that the elements themselves (no less than their compounds) will then become living beings, especially as the soul in elemental air or fire is assumed to be purer than that present in animals [§§ 17—20]. Also (2) the ground for assuming that the elements at large are animated like the parts of them which go to constitute particular things is the principle that the whole is homogeneous with its parts. But from this principle it must follow that the parts of universal soul found in particular things are also homogeneous *inter se*, which is not the case. If it be admitted that air is everywhere uniform and soul is not, it will follow that, though part of the soul may be derived from the atmosphere, part of it is not, which is contrary to this theory. Either, then, soul is everywhere of the same nature, or it must be admitted that it is not uniformly present in every sort of thing [§ 21].

a 7 καὶ ἐν τῷ ὅλῳ δέ...23 τοῦ παντός. Here A. makes a transition to a somewhat different view. Empedocles had said that soul knows, because it is compounded of the same elements as the things which it knows. A. has argued above that, if this were so, all things would be animate, a *reductio ad absurdum*, as he thinks. The opinion that soul was everywhere diffused had,

however, found supporters, and accordingly he proceeds to examine it. In Prof. Bywater's view the whole passage now commencing as far as 411 a 23 (§§ 17—21) is connected with 410 b 27—411 a 2 (§ 15), the intervening section 411 a 2—7 interrupting the context. On this ground he would alter δὲ to δὴ (*Journal of Philology*, XVII. pp. 53, 54).

a 8. ὅθεν ἴσως καὶ Θαλῆς. Illud *ἴσως*...aliquid dubitationis relinquit. So Trend. Later writers are more explicit. Aetius *Plac.* I. 7, 11 (*Doxogr. Gr.* 301) *νοῦν τοῦ κόσμου τὸν θεόν, τὸ δὲ πᾶν ἔμψυχον ἅμα καὶ δαιμόνων πλῆρες· διήκειν δὲ καὶ διὰ τοῦ στοιχειώδους ὑγροῦ δύναμιν θείαν κινητικὴν αὐτοῦ*, Diog. Laert. I. 27 *τὸν κόσμον* (int. *ὑπεστήσατο*) *ἔμψυχον καὶ δαιμόνων πλήρη*. The apophthegm itself was well known: Plato, *Laws* X. 899 B *ἔσθ' ὅστις ταῦτα ὁμολογῶν ὑπομενεῖ μὴ θεῶν εἶναι πλήρη πάντα;* Cicero, or his authority, gives it a religious turn, *De Legg.* II. 11 § 26 "Thales...homines (dicit) existimare oportere omnia, quae cernerent, deorum esse plena; fore enim omnis castiores, veluti cum in fanis essent maxime religiosis."

a 9. ἐν μὲν τῷ ἀέρι. From this we learn how A. himself interprets the theory that soul is intermingled in the universe. He regards it as meaning that soul is present in all the elements, wherever found; while he would probably have agreed with Plato (*Philebus* 29 B sqq.) in thinking that these elements are found in the universe (*ἐν τῷ παντί*) in a purer and more potent form than in human organisms (*παρ' ἡμῖν*). Whether this would have been admitted by the supporters of the theory under examination we cannot tell; but from A.'s language in the next sentence (*ἐπιζητήσειε γὰρ ἄν τις*) it seems highly probable that they did admit it.

a 10. ἐν δὲ τοῖς μικτοῖς, those compounds of elements which form the bodies of animals. In 435 a 11—b 3 A. will prove on teleological grounds that no animate body can be constituted out of one or more *ἁπλᾶ σώματα*; the constituents must be *μικτά*. Such is the constitution of the *ὁμοιομερῆ* or tissues: *De Part. An.* II., c. 1. Cf. *De Gen. et Corr.* I. 10, 328 a 4 *εἴπερ καὶ ἔστι σῶμα σώματι μικτὸν ὁμοιομερές*, *ib.* a 10, *Meteor.* IV. 8, 384 b 30, *ib.* IV. 12, 389 b 26 *ἐκ μὲν γὰρ τῶν στοιχείων τὰ ὁμοιομερῆ*. See *supra* p. 264 and *notes* on 408 a 11, 17.

a 13. συμβαίνει. Torstrik pointed out that 411 a 11 *ἐπιζητήσειε*...13 *ἀθανατωτέρα* is a parenthesis; (p. 131) ita enim facilius intelligetur quae sequantur non ut haec refellantur adiungi sed ut redarguatur principalis adversariorum propositio 7 *ἐν τῷ ὅλῳ τὴν ψυχὴν μεμῖχθαι*.

a 14. ἀμφοτέρως. Whichever alternative they choose leads to an absurdity. It is equally absurd to call fire or air an animal and to deny the title animal to that which has soul in it. It should be noted that, although the presence of soul does not, according to A., necessarily imply a *ζῷον* (see e.g. 410 b 22 sq.), but only *ζῶν τι*, yet the presence of a soul that is *βελτίων*...*καὶ ἀθανατωτέρα* would imply this.

a 15. παραλογωτέρων. Philop., like Them., in place of this word reads *παραβολωτέρων*, which he explains thus: 189, 11 *παραβολώτερος ὁ λόγος, τουτέστι τολμηρὸς καὶ ἐπικίνδυνος*.

a 16. ὑπολαβεῖν δ' ἐοίκασιν. They seem to have arrived at the opinion that the elemental bodies (411 a 11 *ἐν τούτοις* = *ἐν ὅλοις τοῖς ἁπλοῖς σώμασιν*, Them. 36, 4 H., 65, 12 Sp. fire and air being examples) contained soul, from observing that each of them is homogeneous, the fraction of each element found in our bodies not being different in kind or quality from the same element outside of us. Compare again Plato *Phil.* 29 A—30 B.

a 18. ὥστ' ἀναγκαῖον αὐτοῖς. They are bound in consistency to extend this principle, that the whole is homogeneous with its parts, to the case of soul.

a 18. ὁμοειδῆ τοῖς μορίοις. Cf. *infra* a 23 ὁμοιομερῆ.

a 19 εἰ τῷ ἀπολαμβάνεσθαί τι...20 γίνεται. ἀπολ. is passive. Some portion of a given element is detached from the surrounding universe (cf. *supra* 404 a 10) and enclosed in the organism, e.g. air during respiration: Them. 36, 7 H., 65, 15 Sp. *ὥσπερ γὰρ τὰ μόρια τῶν ἁπλῶν σωμάτων ἐναπολαμβανόμενα τοῖς ζώοις σύνθετα αὐτὰ ἐκ πάντων ποιεῖ, οὕτω καὶ τὰ μόρια τῆς ἑκάστου τῶν στοιχείων ψυχῆς ἔμψυχα αὐτὰ ἀπεργάζεται.*

a 20 εἰ δ' ὁ μὲν ἀὴρ...21 ἀνομοιομερής. This does not mean, as Them. (36, 9—12 H., 65, 19—23 Sp.) supposes, that while there is no difference of kind between elemental air as a whole and that part of it which goes to constitute the body of an animal, there is a difference of kind between the soul which animates the whole element and the soul of the animal, viz. that the former is superior to the latter. The use of a different word ἀνομοιομερὴς suggests another meaning. Soul is made up of unlike parts or faculties (nutritive, sensitive, etc.) not always found in combination. Propositionem quae in refutatione efficiendâ minor est tanquam ab omnibus concessam ne ponit quidem, animam nimirum humanam differre ab animâ ceterorum animalium, a plantae animâ utramque....Anima, ait, quae inest corporibus viventibus non est ὁμοιομερής: at debebat esse ut aliquam vim haberet adversariorum argumentum quod legimus 16—17 (Torstrik, p. 132).

a 21 τὸ μέν τι αὐτῆς...22 τὸ δ' οὐχ ὑπάρξει, int. τῷ ἀέρι. Αὐτῆς = τῆς ψυχῆς. Whether we do or do not follow Torstrik in considering ὑπάρξει δῆλον ὅτι an intrusion from the margin, in any case the main stress rests on the second of the coordinated and contrasted clauses. The argument seems to be as follows. If the air is ὁμοειδής, homogeneous, uniform, then whatever form of soul is contained in one part of the air must be contained in all parts of the air. Again, since it is by a part of the surrounding air being separated from the rest and enclosed in animals that they become endowed with soul, the soul in animals should be uniform also, in which case it could be only the lowest type found in animals. But, as a matter of fact, higher animals possess in addition to the lowest form higher forms, e.g. man has the rational soul (410 b 16—24). These higher types of soul cannot, as above shown, be present in the air. Therefore, if the soul is to be present uniformly in the air, it must itself be homogeneous: and, if it is not homogeneous, it cannot be present uniformly in the air.

a 23. τοῦ παντός. Cf. 411 a 7 ἐν τῷ ὅλῳ. Them. (36, 20 H., 66, 4 Sp.) and Simpl. (76, 6 sq.) understood τοῦ παντός, like ἐν τῷ ὅλῳ, of the universe. Philop. (192, 10—12) mentions this interpretation, as well as that which understands ἀέρος with τοῦ παντός, without deciding between them. Trend., however, favours the latter: de singulis elementis et de aëre maxime dictum est. As in this particular point, so generally in discussing 411 a 7—23, the Greek commentators are influenced by their personal philosophical predilections. Thus Simpl. (74, 27 sqq.) ascribes to the elements a diviner life and a higher degree of immortality than to men, and repudiates altogether the notion that they are without soul. On the other side cf. Philop. 192, 2—9. Them. again (e.g. 36, 12 H., 65, 22 Sp.) regards the assumption that soul is ἀνομοιομερὴς (or at least οὐχ ὁμοειδής) as based upon the belief that there is a better and more immortal soul in the elements than that which animates τὰ ζῷα (cf. 411 a 11, 13). He declines to credit A. with this belief, which he does not hold himself.

a 24 φανερὸν οὖν...26 λέγεται. This sentence dismisses the two main views of soul previously maintained; cf. 403 b 27 sqq. The view that it is composed of the elements has occupied us in this chapter, 409 b 23—411 a 23; the view

that it is moved was examined 405 b 31—407 b 11 and 408 b 30—409 b 18. The remainder of this chapter discusses questions relating to the unity or divisibility of the soul, cf. 402 b 1, 9 sqq.

411 a 26—b 30. The dismissal of these theories suggests the further enquiry whether the various functions of soul, perception, opinion, desire, etc. belong to the whole soul or are to be severally assigned to parts of the soul. The question may even be raised of life itself. Does it reside in one or more or all parts of the soul, or is it due to some other cause? [§ 23]. Of those who make the soul divisible we enquire "On what does the unity of the soul depend?" If there is a principle of unity, a soul of the soul, we go on to enquire whether it also has parts? Then what holds *them* together? and so on *ad infinitum* [§ 24]. Again, if soul as a whole keeps the body together, what share in this process must be assigned to the several parts of the soul, e.g. to the intellect [§ 25]? Experiment shows that plants and the lower orders of animals continue to live for some time after they have been divided; hence we may infer that the vital principle in the two segments is of the same nature; there is no reason to assume division into parts [§ 26]. This vital principle will be the vegetative soul of plants, and the sentient and locomotive faculty of worms [§ 27].

a 26. ἐπεὶ δὲ τὸ γινώσκειν τῆς ψυχῆς ἐστί. The question which in 411 a 30 follows this long enumeration of functions of the soul is perhaps due to the suggestion 408 b 11 sqq. that not the soul itself but the man with his soul is the true subject of these functions, the *ὑποκείμενον* to which as *ἔργα καὶ πάθη* they belong. The man is a *σύνολον*, a compound of body and soul; so that the problem of the latter part of c. 1, 403 a 3—b 19, is closely akin to that which is about to be discussed.

a 28. καὶ ὅλως αἱ ὀρέξεις. Cf. 403 a 7, *note*. From 433 a 22 sqq. it appears that *βούλησις* is a species of *ὄρεξις* and is opposed to *ἐπιθυμία* as rational to irrational desire. Cf. 432 b 6 *εἰ δὲ τρία ἡ ψυχή, ἐν ἑκάστῳ ἔσται ὄρεξις*. 414 b 2 *ὄρεξις μὲν γὰρ ἐπιθυμία καὶ θυμὸς καὶ βούλησις*. Desire, which was to Butler a generic term, is nowadays ambiguous, sometimes used for the genus, *ὄρεξις*, sometimes for the species, *ἐπιθυμία*, which has pleasure or pleasurable sensation for its object (Butler's "appetite").

a 29. γίνεται δέ. This is still part of the protasis, which extends to a 30 *φθίσις*. It is permissible, in translating such a long preamble, to drop the causal conjunction, which is replaced by "hence" or "therefore" where the apodosis begins. Cf. *Rhet.* II. 18, 1391 b 8 sqq. with Cope's note; Bonitz, *Aristot. Studien*, II., III. p. 3 sqq. **ὑπὸ τῆς ψυχῆς.** *γίνεσθαι* = "to come about" and *ὑπάρχειν* = "to be attributed to" often serve as passives of verbs of causation with *ὑπὸ* and *διά*. Cf. 408 b 7, *note*, 417 b 17. Cf. Eucken, *Ueber die Praepositionen*, p. 73, *Metaph.* 1033 b 8, *Phys.* II. 8, 199 a 13.

a 30 πότερον ὅλῃ τῇ ψυχῇ...411 b 3 ἢ μορίοις. This is the apodosis to *ἐπεὶ* (411 a 26). From the theory sketched in Bk II., c. 3 onwards we might too hastily infer that A. decides in favour of the second alternative, merely modifying the scheme of parts or faculties previously recognised (cf. 432 a 22—b 7, 433 b 1—4). But the hypothesis of unity is evidently favoured by the present passage and is supported by still more weighty considerations in 425 a 31, 426 b 14—427 a 16, 429 b 13—21, 430 b 5, 431 a 20 sq.

411 b 1. καὶ πάσῃ, "that is, is it with the whole soul that we think?" Καὶ is explicative, = "that is to say."

b 3. καὶ τὸ ζῆν δή. And, further, as regards life itself, which is implied in all these functions, where, we ask, does it reside? Cf. *ᾧ ζῶμεν*, 414 a 4 (with which again cf. 413 b 1, 415 a 23—25). Philop. 195, 34—196, 4 rightly interprets *ζῆν*

of the barest minimum, the life of the plant, and accordingly refers it to the **φυτικὴ δύναμις** or vegetative faculty.

b 4. **ἢ καὶ ἄλλο τι αἴτιον**, i.e. is there some cause independent of soul, its parts or faculties, to which this lowest grade or minimum of life should be assigned? From A.'s own point of view, as set forth in the definition, II. cc. 1—3, it is a defect to overlook mere vitality in its lowest grade as belonging to soul, just as it is equally a defect in Democritus to equate ψυχή, wherever found, with νοῦς, life with mind, and recognise no distinction of kind between this lowest grade of vitality and the highest intelligence.

b 5. **λέγουσι δή τινες**, Plato in the *Republic* and the *Timaeus*. Cf. *Republic* 434—441 (especially 435 C, 439 B), 442 C, 444 B, *Timaeus* 69 C sqq. (cf. *Phaedr.* 246 A). On the other hand the *Phaedo* ignores this tripartition, and treats soul as a unity in contradistinction to body: *Phaedo* 78 B—80 B (cf. 66 A—E, 81 D—84 B). A. recurs to the Platonic division 413 b 27, the whole passage 413 b 13—32 being concerned with the same problem; and again 432 a 22 sqq., where he has his last word on the subject. **ἄλλο μὲν νοεῖν ἄλλο δὲ ἐπιθυμεῖν.** Probably these are simply illustrations of alleged "parts," not intended to be exhaustive; cf. 432 a 25 sq. The division of soul into λογιστικὸν and ἄλογον was current in popular opinion before Plato, and is adopted by A. himself as the basis of the popular exposition of psychology given in *Eth. Nic.* 1102 a 26 sqq.

b 6 **τί οὖν δή ποτε...7 πέφυκεν.** Cf. *infra* b 9 μίαν αὐτὴν ποιεῖ. In his analysis of the notion of unity A. begins by classifying the things of which the term "one" is predicated. He makes a twofold division into (*a*) ὧν ἡ κίνησις μία, (*b*) ὧν ἡ νόησις μία. Under (*a*) he brings τὰ φύσει συνεχῆ, things which possess natural continuity (*Metaph.* 1016 a 4, 1052 a 35), and wholes, ὅλον, τὸ ἔχον εἶδος (1052 a 22), and even admits ὧν τὸ ὑποκείμενον τῷ εἴδει ἀδιάφορον (1016 a 18). Under (*b*) he places τὸ καθόλου, ὧν τὸ γένος ἕν (1016 a 24) and τὸ καθ' ἕκαστον, ὧν ἡ νόησις ἀδιαίρετος ἡ νοοῦσα τὸ τί ἦν εἶναι (1016 b 1). Cf. 1016 a 4 sqq., 1052 a 20, 30, 34 sqq. Coherence or continuity on the one side, indivisibility on the other, are thus the marks of unity. Cf. 420 a 3, *note*.

A. defines his own position 1045 a 8—12. In all things which consist of several parts, where the entire thing is not a mere heap or aggregate, but a whole distinct from its parts, there is some cause of unity: in corporeal things contact, cohesion or some similar property. See also *note* on 402 b 5. Hence, when examining a divergent theory, he can enquire if it explains why things, especially incorporeal things, are one: e.g. what makes the unity of mathematical magnitudes, *Metaph.* 1077 a 20—24, or of the number, *ib.* 1044 a 3 καὶ τῷ ἀριθμῷ δεῖ εἶναί τι ᾧ εἷς, ὃ νῦν οὐκ ἔχουσι λέγειν τίνι εἷς, εἴπερ ἐστὶν εἷς. ἢ γὰρ οὐκ ἔστιν ἀλλ' οἷον σωρός, ἢ εἴπερ ἐστί, λεκτέον τί τὸ ποιοῦν ἓν ἐκ πολλῶν. Cf. *Metaph.* H., c. 6 generally, especially 1045 a 22—b 17, which gives his own solution of the problem. Cf. also 410 b 10 sqq.

b 7. **οὐ γὰρ δὴ τό γε σῶμα**, though Democritus amongst A.'s predecessors (cf. 404 a 9—16) and after him Epicurus held this opinion, while on the other hand the Stoics regarded the material body as held together by the equally material soul. **δοκεῖ γάρ.** A widespread popular view. See Plato *Phaedo* 80 C ᾧ προσήκει διαλύεσθαι καὶ διαπίπτειν καὶ διαπνεῖσθαι (the last two words, not found in the best MSS., were omitted by C. F. Hermann. Considering that σήπεται recalls ἂν σαπῇ of *Phaedo* 80 D it seems safe to assume that A. read them). **τοὐναντίον.** Cf. 416 a 6—9, where A. insists, against Empedocles, on the necessity of a unifying principle, i.e. a soul, to keep together the plant. Cf. *Metaph.* 1077 a 21 τὰ μὲν γὰρ ἐνταῦθα ψυχῇ ἢ μέρει ψυχῆς ἢ ἄλλῳ τινὶ εὐλόγῳ

[some rational cause]· εἰ δὲ μή, πολλά, καὶ διαλύεται [they become a plurality and fall to pieces].

b 10. ἐκεῖνο, i.e. that other something, ἕτερόν τι, which holds the soul together, and is the cause of its unity. The difficulty is then shifted to this "soul of the soul."

b 13. καὶ οὕτω δὴ πρόεισιν ἐπὶ τὸ ἄπειρον. Impersonal, as in other cases where this formula is used; *Ind. Ar.* s.v. 638 b 22 sqq. Cf. 425 b 16, *Eth. Nic.* 1094 a 20, *Metaph.* 1000 b 28, 1006 a 8 sq. It seems improbable that ὁ λόγος is the subject. An infinite regress of this sort A. declares to be in actuality impossible. *Anal. Post.* I. 22, 83 b 6 sq. *Phys.* VIII. 8, 263 b 3 ὥστε λεκτέον πρὸς τὸν ἐρωτῶντα εἰ ἐνδέχεται ἄπειρα διεξελθεῖν ἢ ἐν χρόνῳ ἢ ἐν μήκει, ὅτι ἔστιν ὥς, ἔστι δ' ὡς οὔ. ἐντελεχείᾳ μὲν γὰρ ὄντα οὐκ ἐνδέχεται, δυνάμει δ' ἐνδέχεται. When an opinion under criticism has been shown to involve an infinite regress in actuality, A. regards it as disproved by *reductio ad impossibile*.

b 14. ἀπορήσειε δ' ἄν τις. A corollary to the question b 6 τί οὖν συνέχει τὴν ψυχήν, εἰ μεριστὴ πέφυκεν; Various difficulties attend the working out of any theory assigning different functions to different parts of the soul.

b 15 εἰ γὰρ ἡ ὅλη...16 συνέχει. Supply as a second premiss "and if the soul is divisible" (b 7). Note also that A. is employing the same mode of argument from whole to part as in 408 a 10—13 and 412 b 23—25. See *notes*.

b 18. χαλεπὸν καὶ πλάσαι. Cf. 406 a 27, *note*. The statement is important from its bearing on νοῦς (Philop. 199, 26, 28 μόριον γὰρ τῆς ψυχῆς καὶ ὁ νοῦς), which, as we shall see, 429 a 24—27, is independent of the body and employs no bodily instrument. Philoponus continues, 200, 2 ἐν τούτῳ δὲ τῷ χωρίῳ ὁ Ἀλέξανδρος ἀπορήσας παντελῶς εἰπεῖν τι τοῦ ἰδίου σκοποῦ ἐχόμενον, σιωπῇ παρῆκε τὸ χωρίον. καὶ ἐξ αὐτῶν ἄρα τῶν ἐνταῦθα λεγομένων δῆλός ἐστιν ὁ Ἀριστοτέλης ἑτέρας οὐσίας εἶναι λέγων τὸν νοῦν καὶ χωριστόν. Perhaps Alex. Aphr. supposed that A. is here accommodating himself to the views of his opponents. The inference of Philop. is borne out by 413 b 24 sq.

b 19 φαίνεται δὲ καὶ...27 οὔσης. These facts, to which A. again appeals, 413 b 16—24, are introduced here to suggest that the soul in each separate segment resembles the soul of the undivided plant or animal, as in 409 a 9 sq.: the soul of each segment is not indeed numerically identical with, but is specifically the same as, the soul of the entire organism. The view that the soul has parts would lead us to expect a fragment of soul, the imperfect or mutilated soul, in each of the segments. As Themistius says (37, 36—38, 1 H., 68, 23—25 Sp.), in the case of plants we do not find one sort of vegetative soul in the root, another in the stem and another in the branches.

b 20. ἔνια τῶν ἐντόμων. A. gives a definition of "insects," *Hist. An.* I. 1, 487 a 32 καλῶ δ' ἔντομα ὅσα ἔχει κατὰ τὸ σῶμα ἐντομάς, ἢ ἐν τοῖς ὑπτίοις ἢ ἐν τούτοις τε καὶ τοῖς πρανέσιν: and again IV. 1, 523 b 12 sqq., where he remarks that many species are included under the term. A.'s "insects" include not only insecta proper (A.'s Hexapodous insects), Myriapoda and Arachnida, but also intestinal parasites, but they do not include Crustacea. "Segmentation was the main character of the group in A.'s estimation. Probably therefore he included Annelida in the group, led to this not only by their manifest segmentation, but by their retention of life when cut into pieces, a character often mentioned by him as specially belonging to insects" (Dr Ogle, *Parts of Animals*, p. 229). It is mainly of earthworms that A. is thinking here and in the parallel passages. I am informed that in recent years the groups formerly included under Annelida have been redistributed, and that a new class, Chaetopoda, has been formed under which earth-worms are now included as belonging to Oligochaeta.

b 20. ὡς τὴν αὐτὴν ἔχοντα ψυχὴν τῷ εἴδει, εἰ καὶ μὴ ἀριθμῷ. To numerical identity is opposed specific identity. All the members of a class or kind share in the characteristic properties which belong to the kind, its specific differences: *Ind. Ar.* 94 a 35 ἕν, τὸ αὐτὸ ἀριθμῷ, dist. εἴδει (λόγῳ), γένει, κατ' ἀναλογίαν, *Top.* I. c. 7, 103 a 6 sqq. On the four meanings of ταὐτόν, viz. ἀριθμῷ, εἴδει, γένει, κατ' ἀναλογίαν, see *Metaph.* esp. 1016 b 31—5 with Bonitz' commentary. Cf. 415 b 7 ἀριθμῷ μὲν οὐχ ἕν, εἴδει δ' ἕν, Philop. 200, 18—20 ὥστε μία καὶ ἡ αὐτὴ ψυχὴ ἐπὶ τούτων πρότερον μὲν τῷ ἀριθμῷ, πρὶν διαιρεθῇ, μετὰ δὲ τὸ διαιρεθῆναι τῷ εἴδει (cf. 411 b 25 ὁμοειδεῖς), οὐκέτι μέντοι καὶ τῷ ἀριθμῷ.

b 23. ὥστε σώζειν τὴν φύσιν, to maintain their nature or being, i.e. to keep themselves alive, to survive as natural objects, using their organs and faculties to escape destruction. Cf. 416 b 13 ᾗ δὲ τόδε τι καὶ οὐσία [int. τὸ ἔμψυχον], τροφή· σώζει γὰρ τὴν οὐσίαν, καὶ μέχρι τούτου ἐστὶν ἕως ἂν τρέφηται, 416 b 17 ἡ μὲν τοιαύτη τῆς ψυχῆς ἀρχὴ [i.e. τὸ θρεπτικὸν or φυτικόν] δύναμίς ἐστιν οἵα σώζειν τὸ ἔχον αὐτὴν ᾗ τοιοῦτον.

b 24. ἀλλ' οὐδὲν ἧττον, although the segments of the worms fail to maintain a separate existence for any length of time. **ἐν ἑκατέρῳ τῶν μορίων,** in each of the segments, i.e. the parts of the body which has been divided.

b 25. ἅπαντ' ἐνυπάρχει τὰ μόρια τῆς ψυχῆς. This brings out the full force of b 20 ὡς τὴν αὐτὴν ἔχοντα ψυχὴν τῷ εἴδει. Here μόρια must mean the parts or faculties of the single soul, which in the illustration, b 21, are cited as αἰσθητικὸν and κατὰ τόπον κινητικόν, in addition to θρεπτικόν, which must also be present, as in the cutting of the plant. Probably from the presence of αἰσθητικὸν A. would infer ὀρεκτικὸν in its lowest form. A.'s point is that all the faculties present in the soul before the division into segments are present after division in each of the segments.

b 25. ὁμοειδεῖς εἰσὶν ἀλλήλαις καὶ τῇ ὅλῃ. The text here is very uncertain. The reading ὁμοειδεῖς...ἀλλήλαις has the better authority, for though Trend.'s note (ed. 1, p. xxxiv.) is "ὁμοειδῆ nunc scriptum est in cod. E; quam Bekkerus ὁμοειδεῖς lectionem commemoravit, eam subfuisse coniectum est," there is no doubt that the scribe of E first wrote or intended to write ὁμοειδεῖς and then changed to ὁμοειδῆ. The former was read by Simpl. and Philop., who are far older witnesses. It is possible that ὁμοειδῆ is genuine and was altered to ὁμοειδεῖς to suit τῇ ὅλῃ. If ἅπαντα τὰ μόρια is the subject of ὁμοειδῆ εἰσίν, it must be taken distributively in this sentence, so that τῇ ὅλῃ = τοῖς τῆς ὅλης μορίοις. Torstrik restored ὁμοειδεῖς and he argues in its defence that ὁμοειδῆ could not be applied to τὰ μόρια τῆς ψυχῆς understood as faculties: ipsae animae eiusdem generis sunt, non animae partes vel facultates: nam τὸ ὀρεκτικόν opinor ex alio genere est ac τὸ αἰσθητικόν, et cetera simili modo (p. 133). He has not quoted, but doubtless had in mind, 411 a 18 καὶ τὴν ψυχὴν ὁμοειδῆ τοῖς μορίοις εἶναι, where the argument requires that by τοῖς μορίοις A. should mean not the single faculties, but the entire souls of separate individuals. But, if all the parts of the soul in each of the two segments are said to be homogeneous (ὁμοειδῆ) with one another, it is possible to understand by this not, as Torst. seems to think, that the appetitive part is homogeneous with the sensitive part found in the same segment, but rather that the sensitive part in the one segment is homogeneous with the sensitive part in the other, and so on, and consequently the whole soul made up of these faculties in the one segment with the whole soul made up of these faculties in the other, and with the whole soul made up of these same faculties in the as yet undivided organism. Thus understood, the reading ὁμοειδῆ...ἀλλήλοις gives a plain sense. Cf. Them. (38, 11 H., 69, 9 Sp.) ἐξ ὧν ἁπάντων δῆλόν ἐστιν, ὅτι ὁμοειδῆ τὰ μόρια τῆς ψυχῆς καὶ ἀλλήλοις καὶ τῇ ὅλῃ, ἀλλήλοις μὲν τὰ ἐν τοῖς μέρεσι

τοῖς διῃρημένοις τοῦ σώματος, ὅλῃ δὲ τῇ πρὸ τῆς διαιρέσεως ἐνυπαρχούσῃ τῷ ζώῳ. Can as much be said for ὁμοειδεῖς...ἀλλήλαις? Philop., who cites the passage in full with this reading (200, 24—26), does nothing to elucidate it, for his commentary would be more appropriate to ὁμοειδῆ...ἀλλήλοις: (200, 26) τὰ γὰρ μόρια τοῦ ἐντόμου, ὁμοίως δὲ καὶ τῶν φυτῶν, **ἑαυτοῖς** τέ εἰσιν **ὁμοειδῆ**, ὅτι οὐ χωριστὰς ἔχουσι τὰς δυνάμεις τῆς ψυχῆς, ἀλλὰ πᾶσαι αἱ δυνάμεις ἐν ἑκάστῳ εἰσί. τοῦτο γάρ ἐστι τὸ ἀλλήλων μὲν ὡς οὐ χωριστὰ ὄντα. εἰσὶ δὲ καὶ τῇ ὅλῃ ψυχῇ **ὁμοειδῆ** τῇ πρὸ τῆς τοῦ ζῴου διαιρέσεως. εἰσὶ δὲ αὐτῇ διὰ τοῦτο ὁμοειδῆ, ὡς διαιρετῆς οὔσης τῆς ὅλης εἰς ὁμοιομερῆ. The incongruity is noticed by Trend., p. 241 ex quibus etsi verba ὁμοειδεῖς εἰσιν ἀλλήλαις laudantur, quid Philop. ipse, cum statim τὰ μόρια subiciat, legerit, non satis patere arbitramur. Simplicius seems to have understood ἅπασαι αἱ ψυχαὶ as the subject of ὁμοειδεῖς...τῇ ὅλῃ, as he is at pains to prove that each of the faculties could be called a soul: (79, 27) εἰ δὲ αἱ ἔσχαται ζωαὶ ἀμερίστως ἀλλήλαις συνυπάρχουσι, μειζόνως αἱ κρείττους, καὶ **ὁμοειδεῖς εἰσίν**, οἷον αἱ ψυχαί, **ἀλλήλαις τε καὶ τῇ ὅλῃ**· ψυχὰς νῦν οὐ τὰς ἐν πλείοσι ζῴοις καλῶν, ἀλλὰ τὰς ἐν ἑκάστῳ ζῴῳ διαφόρους ζωάς, οἷον τὴν φυτικήν, τὴν αἰσθητικήν, τὴν λογικήν. εἶναι δὲ ταύτας καὶ ἀλλήλαις καὶ τῇ ὅλῃ ὁμοειδεῖς, οὐχ ὅτι τὸ φυτικὸν καὶ τὸ αἰσθητικὸν τῷ εἴδει ταὐτόν, ἀλλὰ διὰ τὴν ἀχώριστον πρὸς ἀλλήλας σύμφυσιν. And, commenting upon ἀλλήλων μὲν κτέ., he remarks (80, 17) ἡ δὲ λέξις ἡ **ἀλλήλων μὲν**...ἀκαταλλήλως εἴρηται, ὅτι τε ἀπὸ τῶν ψυχῶν ἐπὶ τὰ μόρια μετενήνεκται, καὶ ὅτι ἀντὶ δοτικῆς γενικῇ πτώσει χρῆται· δέον γὰρ ἀλλήλαις φάναι, ἀλλήλων εἶπεν. Here Simpl. is careful to point out that A. does not go on talking of ἅπασαι αἱ ψυχαί, but reverts once more to ἅπαντα τὰ μόρια. The changes of subject from μόρια expressed to ψυχαὶ understood and back again to μόρια are capricious and harsh to the last degree. But any inference from this harshness is double-edged: ὁμοειδεῖς may have been altered to get rid of it; as I have suggested above, it may have been produced by altering ὁμοειδῆ, in order expressly to exclude that interpretation of ὁμοειδῆ which Torst. rightly rejects as intolerable and absurd. In any case it is curious to find that Simpl. and Philop. seem so little alive to the meaning of the change of expression. Can they be following an authority who explained ὁμοειδῆ, though they themselves read ὁμοειδεῖς? If we have to interpret ὁμοειδεῖς as predicate of αἱ ψυχαί, it seems strange that Simpl. should not have taken the obvious meaning of ψυχαί, viz. the complete soul or fraction of soul in each segment (cf. 411 b 20 τὴν αὐτὴν ἔχοντα ψυχὴν τῷ εἴδει), for ὁμοειδής = ἡ αὐτὴ τῷ εἴδει. The sentence then becomes parenthetical—"And each of the two souls in the two segments is homogeneous with the other and with the whole soul prior to segmentation." So Bender: "Jedenfalls hindert das nicht, dass nicht in jedem Theil sämmtliche Theile der Seele enthalten seien, *und diese verschiedenen Seelen sind sowohl einander gleichartig, als auch der ganzen Seele.*" The strong point in favour of ὁμοειδῆ...ἀλλήλοις is that the same subject ἅπαντα τὰ μόρια τῆς ψυχῆς is retained throughout and in the same sense, "all the parts or faculties of the soul." But this advantage is entirely thrown away if we take this subject to mean firstly with ἐνυπάρχει the divisions of the soul in the sense of faculties and secondly with ὁμοειδῆ as the divisions, or rather divided portions, of the whole soul retained by each segment. I cannot, therefore, accept M. Rodier's version: "Mais il n'en est pas moins vrai que, dans chacun des segments, toutes les parties de l'âme sont contenues, et que les portions de l'âme ainsi divisée sont spécifiquement identiques entre elles et à l'âme tout entière."

b 26 ἀλλήλων μὲν...27 οὔσης. Simpl. (80, 17—20) thinks, as we have seen, that A. has passed from the souls to the parts and has used the genitive (ἀλλήλων, τῆς δ' ὅλης) instead of the dative. This points to a brachylogy for

ἀλλήλοις μὲν (ὁμοειδῆ) ὡς ἀλλήλων οὐ χωριστὰ ὄντα, τῇ δὲ ὅλῃ ψυχῇ (ὁμοειδῆ ὄντα) ὡς διαιρετῆς οὔσης τῆς ὅλης ψυχῆς. I prefer a simpler explanation. The construction is obscured by the artificial order of the words. ἀλλήλων (which is genitive after χωριστά) and τῆς ὅλης ψυχῆς (in the genitive absolute with ὡς) reproduce the antithesis suggested by ἀλλήλοις καὶ τῇ ὅλῃ ψυχῇ. The first ὡς is followed by accusative absolute: the presence of ἀλλήλων requires that, if any absolute case is used, it should be the accusative. The idiomatic terseness and antithesis of the text stand out by comparison with a paraphrase such as the following: ὡς τῶν μορίων χωριστῶν ὄντων ἀλλήλων μὲν οὔ, τῆς δ' ὅλης ψυχῆς ὡς διαρετῆς οὔσης. The meaning is given more clearly, though in technical language, in 413 b 18 ὡς οὔσης τῆς ἐν τούτοις ψυχῆς ἐντελεχείᾳ μὲν μιᾶς ἐν ἑκάστῳ φυτῷ, δυνάμει δὲ πλειόνων: the "parts" of the vegetative soul, nutritive, augmentative, reproductive, are inseparable from one another, i.e. the vegetative soul is in actuality one. But, as it is at the same time potentially plural, it is capable of division, i.e. upon segmentation all the parts of this vegetative soul are found in each segment: in the segments of the worm not only τὸ θρεπτικόν, but τὸ αἰσθητικόν, τὸ κινητικὸν κατὰ τόπον and τὸ ὀρεκτικόν reappear in each segment, 413 b 21—23, so that they must be inseparable from each other. Thus the soul of a worm is divisible εἰς ὁμοιομερῆ, like a chemical compound, the parts of which, being constituted of the same elements in the same proportion, are represented by the same formula as the whole.

b 28. ἀρχή. Cf. 402 a 6, 413 a 26 δύναμιν καὶ ἀρχὴν τοιαύτην, 413 b 1, 12, 415 b 8, 14, 416 b 18, cited in *note* on b 23. The comparison shows that either the whole soul or any single faculty, part or grade of soul is designated ἀρχή and αἰτία. We are again being led up to the notion of various grades of soul fully expounded below (II., cc. 2, 3), the two here mentioned being the "vegetative" and the "sensitive."

b 28. ψυχή τις. In Bk II., cc. 2—4 this ἀρχή is occasionally styled a faculty (δύναμις) and again a part (μόριον) of the soul. The discussion in 413 b 13—414 a 3 leaves no doubt in what sense these various terms are applied.

b 30. αἴσθησιν δ' οὐθὲν ἄνευ ταύτης ἔχει. Here we have the characteristic feature of A.'s classification of these psychic "principles" or "faculties." You can have the lower grades of soul without the higher, but you cannot have the higher without the lower. Cf. 413 b 1—10, 414 a 32 sqq. This is all the reply we get at present to the further question propounded 411 b 3—5.

BOOK II. CHAPTER I.

412 a 3—6. In Book II. A. passes from his historical review of previous opinions to direct exposition [§ 1].

Alexander's own *De Anima* now becomes a subsidiary aid of great value. The commentary of Zabarella is continuous to the end of c. 7. We have no such detailed exposition by either of these authors of Book I., cc. 2—5.

412 a 4. **ἐπανίωμεν.** We return to the questions enumerated in Book I., c. 1. Cf. the opening words of I., c. 2 (403 b 21) *προελθόντας, τὰς τῶν προτέρων κτέ.* It is important, however, to remember that we are more concerned in this chapter to determine how much we include under the term soul, than to establish a given theory of soul. We have first to decide one of the questions raised in I., c. 1, viz. whether all manifestations of life should be referred to soul, or whether, like most of our predecessors, we should restrict soul to certain of the vital functions, e.g. motion and cognition. Even at the close of the chapter Aristotle is careful not to commit himself to the theory that soul is a separate entity (413 a 8 *ἔτι δὲ ἄδηλον εἰ κτέ.*).

a 5. **διορίσαι τί ἐστι.** This was the problem proposed in 402 a 8, 402 a 23, 402 b 5 sqq., 402 b 16 sqq. **κοινότατος λόγος.** Cf. 402 b 5—8, where the doubts expressed justify the superlative *κοινότατος*, as general a definition as may be, considering the gradations of soul, already hinted at in Book I. (410 b 19—27) and to be expounded in cc. 2, 3 of the present book.

412 a 6—413 a 10. The definition of soul.

412 a 6—11. Our starting point is substance, which can be analysed into matter and form, matter being potentiality and form actuality [§ 2].

This, perhaps the most characteristic of A.'s metaphysical doctrines, is fully expounded in *Metaph.* Z., H. and Λ., cc. 1—5, where *οὐσία* is analysed into matter, form and a compound of the two. Here, as often, the doctrine is not expounded, but taken for granted.

a 6. **γένος ἕν τι τῶν ὄντων.** This is fully explained in the *Categories*, cc. 2—5. In fact, the doctrine of the *Categories* is briefly that anything which can be spoken of is either substance or one of the appendages of substance, quality, quantity and relation being the most important of these appendages. Cf. *Metaph.* 1069 a 19 *καὶ γὰρ εἰ ὡς ὅλον τι τὸ πᾶν, ἡ οὐσία πρῶτον μέρος· καὶ εἰ τῷ ἐφεξῆς, κἂν οὕτω πρῶτον ἡ οὐσία, εἶτα τὸ ποιόν, εἶτα τὸ ποσόν. ἅμα δ' οὐδ' ὄντα ὡς ἁπλῶς εἰπεῖν ταῦτα, ἀλλὰ ποιότητες καὶ κινήσεις.* By *γένος ἕν τι* is meant simply "one class," while *γένος ἕν γέ τι* would mean "some one class."

a 7. **ταύτης δέ.** Substance is often analysed, as here, into matter and form. It may be useful to compare the different statements in *Metaph.* 1029 a 1—9, 1035 a 1—9, 1042 a 26—31, 1043 a 26—1043 b 4, 1070 a 9 sqq. Cf. first *note* on 403 b 2, and generally 403 b 2—19 with *notes*. **τὸ μέν**, int. *λέγομεν οὐσίαν.* **καθ' αὑτὸ μέν.** This is an instance of *μέν* solitarium, as in 418 a 14.

a 7. **τόδε τι**, "a determinate something." A technical expression for a concrete particular thing. From this man, this house, this tree, this stone we

generalize "this something." The importance of the technical term consists in the Aristotelian doctrine that it is in such concrete particulars and not in universals that reality primarily resides. Matter considered in itself is indeterminate unless and until it is determined by union with form.

a 8. μορφὴν καὶ εἶδος. By these two terms Aristotle indicated his formal cause, which is always correlative to matter, determining and actualising matter which would otherwise, or in itself, be indefinite and potential. μορφή, "shape," is comparatively seldom used alone (καὶ is of course explanatory, "that is to say"), but it is less ambiguous than εἶδος, which serves for "species" as opposed to "genus," to say nothing of its perpetual use to denote the Platonic idea. More frequent is the combination here used. Cf. *Metaph.* 1033 b 5 φανερὸν ἄρα ὅτι οὐδὲ τὸ εἶδος, ἢ ὁτιδήποτε χρὴ καλεῖν τὴν ἐν τῷ αἰσθητῷ μορφήν, οὐ γίγνεται. The two terms are combined, μορφὴ as here coming first, in *Phys.* II. 1, 193 a 30 sq., *De Gen. et Corr.* II. 9, 335 b 6, *Metaph.* 1017 b 25 sq., 1052 a 22 sq.; quite as often εἶδος precedes μορφή, and that the order is indifferent appears from *De Cael.* I. 9, 278 a 14 sqq. καὶ τὸ μὲν ὡς εἶδος καὶ μορφὴ τὸ δ' ὡς τῇ ὕλῃ μεμιγμένον. ὧν δ' ἐστὶ μορφή τις καὶ εἶδος, κτέ.

a 8. καθ' ἥν, i.e. κατὰ τὴν μορφήν. The sense of the preposition is "in virtue of," as in 406 a 4. Without form there can be no determination, no definite thing. **λέγεται τόδε τι,** "a particular existence is so called." From the preceding line we expect τόδε τι to be predicate: if so, it is also subject. Particularity belongs to nothing except the form (which is excluded by καθ' ἥν) and the concrete particular thing in which the form resides. Some would say that τὸ μέν, οὐσία ὡς ὕλη, is subject: but matter is not "this something" by itself, and its union with form constitutes just the very οὐσία under analysis, τὸ ἐξ ἀμφοῖν. However, λέγειν can be used without asserting a predicate of a subject, both in the active, 417 a 10, and more often in the passive with a causal dative, *Metaph.* 1018 a 31 sq. (cf. 1017 a 19 sq.), or an adverbial phrase. Thus ταῦτα λέγεται means simply "These things are spoken of," "these terms are used," in this or that way: κατὰ μεταφορὰν 420 a 29, κατ' ἀριθμόν, κατὰ τὸ ἓν *Metaph.* 1021 a 8 sq., 10, πολλαχῶς 415 b 8 sq., 426 a 26, 412 a 22, 414 a 14. This is confirmed by a modal or conditional clause following 412 a 22, 422 a 26 sq., *Metaph.* 1022 b 4, 22. In 424 a 23, 429 b 6 λέγεται should be similarly taken.

a 9. τρίτον τὸ ἐκ τούτων. Matter and form are correlative. The substances with which we are concerned are concrete things and their analysis into matter and form is logical only. As Grote says (p. 454, 2nd ed., vol. II., p. 182, 1st ed.), "There can be no real separation between the two: no shape without some solid material; no solid material without some shape. The two are correlates; each of them implying the other, and neither of them admitting of being realised or actualised without the other." And again (p. 454, 2nd ed., vol. II., p. 181 sq., 1st ed.), "This distinction is borrowed from the most familiar facts of the sensible world—the shape of solid objects. When we see or feel a cube of wax, we distinguish the cubic shape from the waxen material; we may find the like shape in many other materials—wood, stone, etc.; we may find the like material in many different shapes—sphere, pyramid, etc.; but the matter has always some shape, and the shape has always some matter. We can name and reason about the matter, without attending to the shape, or distinguishing whether it be cube or sphere; we can name and reason about the shape, without attending to the material shaped, or to any of its various peculiarities." And Them. (39, 13 H., 72, 7 Sp.) concisely presents the concrete thing (σύνολον) as ἀπολαῦον τοῦ μὲν γίνεσθαι παρὰ τῆς ὕλης, τοῦ δὲ εἶναι παρὰ τοῦ εἴδους. **ἡ μὲν ὕλη...10 ἐντελέχεια.** The antithesis of form and matter is presented in another

way as corresponding to that between potentiality and actualisation (realisation). The latter pair of terms may be no clearer than the former, but they are capable of a far wider application.

a 10. καὶ τοῦτο διχῶς. That is, there are two senses of actuality; a remark which in a modern book would be relegated to a footnote. Cf. 412 b 1 sqq., 415 b 2. Take the case of knowledge. The student who has a capacity for learning, has only potential knowledge when compared with one who has gone through a course of study. Here *ἐπιστήμη* is related to *ἄγνοια* as actual to potential. But the student who has learned is not always exercising his knowledge, and his possession of latent knowledge without the application stands to his actual exercise of knowledge in contemplation (*θεωρεῖν*) as potential to actual. Obviously the latter knowledge is more perfectly realised. The former, the possession of knowledge real but latent, is an inchoate, provisional actualisation. Cf. 417 a 21—29.

412 a 11—b 6. Bodies have the best claim to rank as substances, especially such as are the work of nature, other bodies being derivative from these. A body that grows and decays of itself, and is self-nourished, is a substance compounded of form and matter [§ 3]. A body thus qualified by the possession of life cannot be identical with soul, as body is not an attribute, but a subject or substratum of attributes. That is, in the living organism, the body is *οὐσία ὡς ὕλη*. It follows then that soul must be *οὐσία ὡς εἶδος*. We define it as the form of a natural body potentially possessed of life. But such a substance is actual, not potential [§ 4]; and of the two senses of actuality it is analogous rather to knowledge than to the exercise of knowledge in contemplation of the thing known. For in sleep there is no exercise of faculties, whereas both sleep and waking are compatible with the presence of soul. Knowledge, again, in order of development, is acquired before it can be exercised. Accordingly our definition may now be modified as follows: soul is the primary actuality of a natural body potentially possessed of life [§ 5], i.e. of a natural body furnished with organs [§ 6].

The cogency of this reasoning depends upon two assumptions: (1) that *οὐσία ἡ μάλιστα = σῶμα φυσικόν*, (2) that *σῶμα φυσικὸν ζωὴν ἔχον = ζῷον ἔμψυχον*. The body, of which it is said that it cannot be soul, is the animate body, which is the subject (*ὑποκείμενον*) of the attribute "life," which it is further assumed implies "soul." It could be wished that the last assumption had been definitely stated by Aristotle. There is yet one further assumption, viz. that soul is a substance (*οὐσία*). Some ancient commentators, recognising this, affirm that this has been proved in Book I. (the probable reference being to 408 b 18 *ὁ δὲ νοῦς ἔοικεν ἐγγίνεσθαι οὐσία τις οὖσα*). Here again the absence of a distinct statement is to be regretted. Fortunately the rather arid discussion of II., c. 1 receives much needed elucidation when Aristotle goes over the whole question again in c. 2, 414 a 4 sqq., and some at least of the omissions just noticed are made good. Thus the connexion between life and soul is made clearer. The soul is that whereby in a primary sense we live and perceive and think, and again (cf. 413 a 21 sq.) that which has soul (*τὸ ἔμψυχον*) differs from the inanimate (*τὸ ἄψυχον*) by the presence of life (*τῷ ζῆν*). Later on (414 a 14—19) we have the most distinct recognition that the living organism is the composite substance of which life and soul are attributes. The argument there runs parallel to that in 412 a 16—22, but the necessary link in the chain is inserted 414 a 14 *τριχῶς γὰρ λεγομένης τῆς οὐσίας...ὧν τὸ μὲν εἶδος, τὸ δὲ ὕλη, τὸ δὲ ἐξ ἀμφοῖν, τούτων δ' ἡ μὲν ὕλη δύναμις, τὸ δὲ εἶδος ἐντελέχεια,* **ἐπεὶ τὸ ἐξ ἀμφοῖν ἔμψυχον,** *οὐ τὸ σῶμά ἐστιν ἐντελέχεια ψυχῆς, ἀλλ' αὕτη σώματός τινος.*

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of life in the living animal. Up to this point A. has denoted the composite substance or σύνολον by σῶμα. He can hardly be said to desert this meaning even here, for the body, which is matter (or rather substance as matter) of the compound, is the living body. But when he comes to apply the powerful solvent of analysis, and to investigate λογικῶς, he regards this living body, *quâ* body, as not the entire compound, but only as that part of it which is matter. The inference from "logical subject, never predicate" to "matter of a σύνολον," is a hazardous step. Cf., however, *Metaph.* 1028 b 36—1029 a 9, where οὐσία=τὸ μὴ καθ' ὑποκειμένου ἀλλὰ καθ' οὗ τὰ ἄλλα. But matter, form, and the compound of the two all claim to be οὐσία as τὸ ὑποκείμενον πρῶτον: 1029 a 20, ὕλη καθ' αὑτὴν is none of the categories, 1038 b 4—6, in different senses both τόδε τι and its factor, ὕλη, can be called ὑποκείμενον, 1029 a 21 ἔστι γάρ τι καθ' οὗ κατηγορεῖται τούτων ἕκαστον, ᾧ τὸ εἶναι ἕτερον καὶ τῶν κατηγοριῶν ἑκάστῃ· τὰ μὲν γὰρ ἄλλα τῆς οὐσίας κατηγορεῖται, αὕτη δὲ τῆς ὕλης. ὥστε τὸ ἔσχατον καθ' αὑτὸ οὔτε τὶ οὔτε ποσὸν οὔτε ἄλλο οὐδέν ἐστιν. The body of τὸ ζωὴν ἔχον is compounded of the elements blended in ὁμοιομερῆ: the parts, into which it is divisible and into which at the dissolution of the compound it is disintegrated, are material, e.g. such parts as bones, flesh, sinew or the like, which when the compound has ceased to exist as a compound are mere dead matter. Cf. *Meteor.* IV., c. 12, *Metaph.* 1035 a 17—21, 31 sqq., 1035 b 19—22, 30. Form and matter being relative conceptions, that which is form in one aspect or in one compound may itself be the matter of another compound. That Alex. Aphr. considered the analysis of composite substance into its two factors to be a step in the argument seems clear from his summary statement, *De An. Mantissa* 102, 11, in which he follows the progress of this chapter, while incorporating some things from elsewhere: εἰ δὲ κατὰ μηδέτερον τῶνδε τῶν τρόπων [i.e. as a whole is made up of parts or a mixture of its ingredients, cf. Alex. *De An.* 11, 15, Them. 40, 14 sqq. H., 73, 29 sqq. Sp.] τὸ ζῷον οὐσία σύνθετος, κατὰ τὸν τρίτον λείπεται ἄρα. ἦν δ' οὗτος, καθ' ὃν ἦν τοῦ συγκειμένου τὸ μὲν ὑποκείμενόν τε καὶ ὕλη, τὸ δὲ εἶδος...τὸ ἄρα ζῷον, συγκείμενον ἐκ ψυχῆς τε καὶ σώματος, τῷ τὸ μὲν ὑποκείμενον τούτων εἶναι, τὸ δὲ εἶδος, ἐκ τούτων ἔχει τὴν σύνθεσιν. λείπεται δὴ ἢ τὸ σῶμα τῆς ψυχῆς εἶδος εἶναι, ἢ τὴν ψυχὴν τοῦ σώματος. ἀλλὰ τὸ μὲν σῶμα τῆς ψυχῆς εἶδος λέγειν ἀδύνατον· ὑποκείμενον γὰρ τὸ σῶμα.

The insertion of ἡ before ψυχὴ has some MS. authority, and, according to Philop., whose testimony to the article both with σῶμα and with ψυχὴ in his own text is explicit (215, 11, 18, 22, 32), Alex. Aphr. made ἡ ψυχὴ the subject of this sentence and σῶμα the predicate (Philop. 215, 23 sqq.). Cf. Philop. 215, 25 διὰ γὰρ τοῦ δεῖξαι, φησίν [ὁ 'Αλέξανδρος], ὅτι οὐ σῶμα, συναποδείκνυσιν ὅτι οὐδὲ ὑποκείμενον. This statement respecting Alex. Aphr. seems to me to be strongly confirmed by Alex. Aphr. himself, *De An. Mantissa*, p. 121, 2—15. The comment of Simpl. affords little evidence, for it would be unsafe to build too much upon the words (86, 8) ἡ δὲ ψυχὴ κατὰ τὴν ζωὴν καὶ οὐ κατὰ τὸ σῶμα: while Them., as is shown by the citation in the critical notes, varies the wording of his paraphrase. Sophonias here, as often, agrees closely with cod. E. The belief that somehow A. is here proving that the soul is not body, σῶμα being taken to stand for ὑποκείμενον καὶ ὕλη, is shared by Alex., Them. (40, 4 sqq. H., 73, 14 sqq. Sp.) and Philop., and I do not see how this belief can be accounted for unless the text which they had read ἡ ψυχή. That with the reading of cod. E before them they should have deliberately ignored the article before σῶμα and made ψυχὴ the subject, τὸ σῶμα the predicate, seems well-nigh incredible. If ἡ ψυχὴ is genuine, the article might be omitted by carelessness or by deliberate intention, to make clear that τὸ σῶμα was the subject. The presence of the article with

both σῶμα and ψυχή would explain why some took the one, some the other, for subject. The parallel passage, 414 a 17 sq. οὐ τὸ σῶμά ἐστιν ἐντελέχεια ψυχῆς, favours the view that τὸ σῶμα in our present passage is the subject, as it has been in the immediate context. Many translate the text of cod. E "soul will not be body," i.e. "will be incorporeal," which on grammatical grounds is hardly justifiable, unless we are prepared with Zeller, *Archiv f. G. d. Ph.* IX. p. 538, to omit the article before σῶμα and understand, if not supply, it with ψυχή. The order of the words is no impediment to taking ἡ ψυχή as the subject, as is shown by 408 a 20 πότερον ὁ λόγος (predicate) ἐστὶν ἡ ψυχή (subject), ἢ μᾶλλον ἕτερόν τι οὖσα κτέ. Zabarella, however, well remarks that body may be taken in three senses, viz., as (1) the animate body, the compound (Alex. Simpl.), (2) that which in the animate compound corresponds to matter (τὸ ὑποκείμενον καὶ ἡ ὕλη Philop. 215, 34), and (3) a corporeal entity distinct from (2), such as the early philosophers intended when they described the soul as the thinnest and rarest of substances. In senses (1) and (2), he says, no one ever maintained that the soul was corporeal, but only in sense (3). If A. really intends to show that soul is not corporeal, he must show that it is not so in any one of these three ways. The proof, as presented by Simpl., is inconclusive. And similarly the ancients might easily refute the proof as given by Philop., "You prove that the soul is not the body, say, of a man, that this body is matter, and that therefore the soul is form. But I say that, although the soul is not the body, which is matter, yet it is matter of another, rarer kind. Why should it be form?" It is only from the universal negative, "No *A* is *B*," that you can infer "No *B* is *A*." Body being sensible and therefore more evident than soul, it is easier to prove the universal negative of body than of soul. Thus, according to Zabarella, A.'s argument requires him to prove that the soul is not body, and this he does by proving that body in all three senses of the term is not soul. This view is ingenious, but the more natural inference from Zabarella's arguments would be that A. is not here endeavouring to prove soul to be incorporeal at all: if, as I have argued, A. is analysing the composite whole into its two factors, and asserting them to be quite distinct, there is no need to assume that soul must be the subject, nor to excogitate a meaning for body which will fit the assumption.

a 18. τῶν καθ' ὑποκειμένου, int. λεγομένων. Attributes and qualities, genus and differentia, are predicated of actually existing things, and the latter are bodies: cf. 432 a 3 sqq., *Metaph.* 1028 a 18 sqq., 1029 a 10—27, 1001 b 29 τὰ μὲν γὰρ πάθη καὶ αἱ κινήσεις καὶ τὰ πρός τι καὶ αἱ διαθέσεις καὶ οἱ λόγοι οὐδενὸς δοκοῦσιν εἶναι οὐσίαν σημαίνειν· λέγονται γὰρ πάντα καθ' ὑποκειμένου τινός, καὶ οὐδὲν τόδε τι. The context extends the same argument to the so-called elements or ἁπλᾶ σώματα (1001 b 32—1002 a 4), which are affirmed to be body with various attributes, such as heat and cold. Since καθ' ὑποκειμένου, not ἐν ὑποκειμένῳ, is employed, life in the living body is treated as an essential predicate and not as an accident. See *Categ.*, c. 2. The relation of form to matter and of accident to subject is in some points similar, in some dissimilar. Both form and accident need something in which to inhere if they are actually to exist, if the form is to be realised (403 b 3), both being incorporeal *per se*. But matter equally needs form if it is to exist, the interdependence is mutual, and whereas the subject of an accident can exist independently of it, the accident cannot exist independently of a subject. Again, the subject in which an accident inheres is actually existent, while the matter of a composite substance is only potentially existent (413 a 2 τὸ δὲ σῶμα τὸ δυνάμει ὄν) unless or until form supervenes and actualises it. If A.'s object were, as some suppose, to prove

that soul is form as distinct from accident, nothing could legitimately be inferred from a middle term *εἶναι ἐν ὑποκειμένῳ*, which is all we know of soul so far, a 13—17. The unguarded point in the argument gives occasion for Alex. Aphr. to write his two essays, *ὅτι οὐκ ἐν ὑποκειμένῳ ἡ ψυχή*, *De An. Mantissa*, 119, 21 sqq., *πρὸς τὸ μὴ εἶναι τὸ εἶδος ἐν τῇ ὕλῃ ὡς ἐν ὑποκειμένῳ*, *ἀπ. καὶ λύσ.* I. 8, p. 17. Cf. also his *De An.* 13, 9 sqq.

a 18. μᾶλλον δ'. It is rather, so to say, a substratum in which attributes inhere, i.e. matter. The specific attribute of living body is capacity for vital functions. Cf. 412 b 25 sq. As explained in *Metaph.* 1038 b 5, *τὸ ὑποκείμενον* may mean either the composite whole as the subject of attributes, or matter as the substratum of actuality: *διχῶς ὑπόκειται, ἢ τόδε τι ὄν, ὥσπερ τὸ ζῷον τοῖς πάθεσιν, ἢ ὡς ἡ ὕλη τῇ ἐντελεχείᾳ.* Cf. also *Metaph.* 1088 a 17—21, *πάθη* et *συμβεβηκότα* dist. *ὑποκείμενον*.

a 19. ἄρα. If the living body, *quâ* body, is the substratum or matter, soul is the form. The inference depends on the implications of composite substance above explained, a 6 sqq. The composite substance before us is thought of and spoken of as *σῶμα τοιόνδε*, not as *ψυχὴ τοιάδε*, as *σῶμα ἔμψυχον*, never as *ψυχὴ ἐνσώματος*. If, then, we are justified in identifying *οὐσία ὡς ὕλη* with the body, *οὐσία ὡς εἶδος* must be soul, the *ἀρχή* which causes such *οὐσία ὡς ὕλη* to have life predicated of it, and by thus determining indeterminate matter converts it into *τόδε τι*. Or we may express the same inference more shortly thus: the animal consists of body and soul (413 a 3, *Metaph. saepe*) or soul in body (1043 a 34 sq.), and as soon as we know that an animal is composite substance and body is matter, it follows that soul is the other factor, form. Cf. Alex. Aphr. *De Anima* 11, 14—12, 7 and 13, 9—15, 29, *ἀπ. καὶ λύσ.* I. 8, p. 17, II. 24, p. 74. I cite from the latter (76, 7) *δείξας ὅτι ἡ ψυχὴ οὔτε σῶμα οὔθ' ὑποκείμενον ἐν τῷ ζῴῳ, ἔδειξεν ὅτι ἡ κατὰ τὸ εἶδος οὐσία ἐστὶ ψυχή· δεῖ γὰρ αὐτὴν ἢ ὡς εἶδος ἢ ὡς ὕλην εἶναι ἐν αὐτῷ.*

a 20. δυνάμει. Cf. 412 b 25—27 and *notes*. Why this word is added may be seen by considering the distinction between the living body, which is *ἔμψυχον*, "has soul in it," and the *ἄψυχον*. Growth and self-nurture are functions which the one can and does, and the other cannot, exercise. Cf. 415 b 8. On *δυνάμει* Zabarella remarks that it must not be understood as opposed to *actus* or *ἐντελέχεια* and distinct from it, as a man is capable of walking if he is not actually walking: sumitur in communi, ut amplectatur etiam illam potentiam, quae est simul cum actu. So Them. 42, 27 H., 78, 7 Sp. *εἰ δὲ ἀντὶ τοῦ ὀργανικοῦ τὸ δυνάμει ζωὴν ἔχοντος ἐθέλοις λαμβάνειν, ληπτέον ἐνταῦθά σοι δυνάμει τῇ παρούσῃ, ᾗ δὴ ὑποβέβληται ἐνέργεια, ὡς λέγεται δυνατὸν εἶναι βαδίζειν, ὅ τι βαδίζει, καὶ ὅλως δυνατὸν εἶναι, ὅ τι ἤδη ἐστὶ κατ' ἐνέργειαν· ἦν γὰρ καὶ οὗτος ὁ τρόπος τοῦ δυνατοῦ, ὥσπερ εἴρηται ἐν τοῖς περὶ προτάσεων.* Heinze gives *Anal. Pr.* I. 3, 25 a 38 as the reference. But a more satisfactory voucher is *De Interpr.* 13, 23 a 3 sqq., especially a 7 *τὸ γὰρ δυνατὸν οὐχ ἁπλῶς λέγεται, ἀλλὰ τὸ μὲν ὅτι ἀληθὲς ὡς ἐνεργείᾳ ὄν, οἷον δυνατὸν βαδίζειν ὅτι βαδίζει, καὶ ὅλως δυνατὸν εἶναι ὅτι ἤδη ἔστι κατ' ἐνέργειαν ὃ λέγεται εἶναι δυνατόν, τὸ δὲ ὅτι ἐνεργήσειεν ἄν, οἷον δυνατὸν εἶναι βαδίζειν ὅτι βαδίσειεν ἄν.* Here Zabarella follows Alex. Aphr.: *De An. Mantissa* 104, 11 *ὅταν δὲ λέγωμεν τὴν ψυχὴν εἶναι σώματος φυσικοῦ δυνάμει ζωὴν ἔχοντος, οὐχ οὕτως τὸ δυνάμει κατηγοροῦμεν τοῦ σώματος τότε, ὡς εἰώθαμεν λέγειν ἐπὶ τῶν μηδέπω μὲν ἐχόντων τι, ἐπιτηδείων δὲ πρὸς τὸ δέξασθαι. οὐ γάρ ἐστι τὸ σῶμα τοῦτο χωρὶς ψυχῆς πρότερον, εἶτα δέχεται τὴν ψυχήν, ἀλλ' ἔστιν τὸ δυνάμει ζωὴν ἔχον τὸ δυνάμενον ζῆν, τουτέστιν τὸ ἔχον ὄργανα πρὸς τὰς κατὰ τὸ ζῆν ἐνεργείας καὶ ἔστιν ἴσον τὸ 'δυνάμει ζωὴν ἔχον' τῷ 'ὀργανικόν,'* *De An.* 16, 12—18 *διὸ τὸ ὀργανικὸν σῶμα καὶ δυνάμει ζωὴν ἔχειν λέγει, τῷ δυνάμει ζωὴν ἔχον ἀντὶ τοῦ δυναμένου κατ' ἐνέργειαν ζῆν χρώμενος. τὸ γὰρ ἤδη τὴν τέλειον ψυχὴν ἔχον πολλὰ κατ' αὐτὴν*

δύναται ποιεῖν τε καὶ πάσχειν...ἔστι τὸ δυνάμει, τὸ προσκείμενον, τῆς πρώτης ἐντελεχείας δηλωτικόν. Cf. ἀπ. καὶ λύσ. II. 8, p. 54, where Alex. remarks that ζωὴν ἔχειν and ψυχὴν ἔχειν are not the same (54, 15), τὸ μὲν ἐνεργὲς ἡ ζωή, ὅτι 'ἡ δι' αὑτοῦ τροφή τε καὶ αὔξησις,' τὸ δὲ δυνάμει ζωὴν ἔχον λέγοιτ' ἂν τὸ ὀργανικὸν ἔχον δι' αὑτοῦ [πρὸς] τὸ δύνασθαι τρέφεσθαί τε καὶ αὔξεσθαι. If ὀργανικόν, which later replaces δυνάμει ζωὴν ἔχον, is an exact equivalent, it is hard to see how σῶμα φυσικὸν ὀργανικὸν ceases to be ὀργανικὸν when it is actively operant. Zabarella claims for this interpretation that it clears up the difficulties of the vegetative soul, which is never *in potentia ad operandum*, but always actively operant. Cf. e.g. 413 a 30, *De Gen. et Corr.* I. 5, 322 a 24 sq.

a 21. ἡ δ' οὐσία, i.e. ἡ ὡς εἶδος οὐσία just mentioned. Form, as we were told above (412 a 9 sq.), is ἐντελέχεια, as matter is δύναμις. **τοιούτου**, such as we described, i.e. φυσικοῦ δυνάμει ζωὴν ἔχοντος. The subject of the sentence is, of course, the soul. The soul is that which makes the corporeal part of the animal actual and differentiates the animate from the inanimate body. The utility of this remark turns on the contrast with the views of preceding philosophers. Some regarded soul solely as the cause of motion in the body, some as percipient only. It may be with reason objected that this is an identical proposition and no more than a restatement of the problem to be solved. No definition is valid if it virtually repeats the term to be defined. τοιούτου here implies ἐμψύχου. See *note* on 414 a 28.

a 22. αὕτη δὲ λέγεται διχῶς, as stated 412 a 10 sq. See on 412 a 8.

a 23. φανερὸν οὖν ὅτι ὡς ἐπιστήμη, int. ἡ ψυχὴ σώματος ἐντελέχειά ἐστι. The point reached in the argument was: τοιούτου ἄρα σώματος ἐντελέχεια (ἡ ψυχή ἐστι) and now we add ὡς ἐπιστήμη (ἀλλ' οὐχ ὡς τὸ θεωρεῖν). The difference between the two is much the same as that between a permanent state or formed habit (ἕξις) and the activities (ἐνέργειαι, ἔργα) in which it manifests itself. Cf. again 417 a 22—29, and *Phys.* VIII. 4, 255 a 33 ἔστι δὲ δυνάμει ἄλλως ὁ μανθάνων ἐπιστήμων καὶ ὁ ἔχων ἤδη καὶ μὴ θεωρῶν. **ἐν γὰρ τῷ ὑπάρχειν**, "included in the presence, or possession of soul." This means that organisms possessed of soul may be either asleep or awake. In waking hours many psychical activities will be manifested, of which in sleep there is only the latent capacity. Soul is, by the definition, "the activity which, whether displayed or not, is implicit in the living body."

a 26. καὶ μὴ ἐνεργεῖν. The objection has been raised that the lowest stage of soul, the nutritive (τὸ θρεπτικόν), is as active in sleep as in waking hours. Cf. *Eth. Nic.* 1102 b 2 sqq. Further, A.'s "comprehensive definition" takes account of plants which, as he informs us (*De Somno* 1, 454 a 15—19), do not share in sleeping and waking, these functions being restricted to those creatures which have the power of sensation. A.'s remark, then, in the text must be taken as referring only to the soul in animals, where τὸ αἰσθητικὸν is superadded to τὸ θρεπτικόν. Zabarella observes that it is not knowledge ἁπλῶς which is comparable to sleep, but *scientia non exiens in actum*, knowledge possessed but not applied. **προτέρα δὲ τῇ γενέσει.** There are several senses of πρότερον καὶ ὕστερον enumerated, among other passages, in *Metaph.* Δ., c. 11, cf. Z., c. 13, 1038 b 27 sq. This sense "prior by birth" or "by becoming" is sometimes expressed as earlier in time (πρότερον τῷ χρόνῳ). Conversely, that which is later in birth is said to be "prior in the order of nature" in *Metaph.* 989 a 15 εἰ δ' ἔστι τὸ τῇ γενέσει ὕστερον τῇ φύσει πρότερον, and in *Metaph.* 1050 a 4 τὰ τῇ γενέσει ὕστερα are said to be τῷ εἴδει καὶ τῇ οὐσίᾳ πρότερα. Here ἐπιστήμη, the ἕξις, is said to be produced earlier than τὸ θεωρεῖν, the active exercise. Knowledge cannot be exercised until it has been first acquired.

a 26. ἐπὶ τοῦ αὐτοῦ, "in the same person." I take the pronoun as masculine with Themistius and Philoponus. It is explained by *ἐν τῷ ἑνί*, 430 a 21 : *ἡ δὲ κατὰ δύναμιν* (int. *ἐπιστήμη*) *χρόνῳ προτέρα ἐν τῷ ἑνί* (int. *τῆς κατ' ἐνέργειαν*), *ὅλως δὲ οὐ χρόνῳ*. Philop. 216, 28 sqq. observes that the activity of knowledge in the master precedes the formation of the state of knowledge in the pupil, and that this is why the limitation *ἐπὶ τοῦ αὐτοῦ* is introduced. But there seems no ground for thinking that such a consideration was present to the mind of A., who obviously is throughout dealing with the individual soul.

a 27. ἡ πρώτη, "the earliest in development." Not only does this meaning directly follow from the words *προτέρα δὲ τῇ γενέσει* just before, but it agrees with A.'s intention to discover the most comprehensive definition (*κοινότατος λόγος*), that is, one applicable to soul even in its simplest, least advanced stage. As a matter of fact we see that it is intended to include the "soul" of a plant (see 411 b 19—30, 414 a 33, 415 a 23—25, 424 a 32—424 b 3) as well as of a sponge or jelly fish (see 410 b 19, 432 b 20, 434 b 2). In *De An. Mantissa* 103, 11—20 Alex. Aphr. makes the difference between *ἡ πρώτη ἐντελέχεια* and *ἡ δευτέρα* analogous to the difference between *ἕξεις* and *αἱ κατ' αὐτὰς καὶ ἀπ' αὐτῶν ἐνέργειαι*.

Zabarella also discusses the question : what is the difference between *actus primus* and *actus secundus*? He condemns the view of Averroes that the first is *forma non operans*, the other *forma operans*. He himself decides that the second is *operatio*, rather than *forma operans* simply. Both *primus* and *secundus* may, according to him, be *forma operans*, the first giving *esse specificum*, the second *secundam perfectionem quatenus operatur*. This being so, the first entelechy, whether it is or is not operant, equally gives form to matter, and is soul in both cases alike. Hence it does not mean the absence of operating, but merely that soul is considered abstractly, apart from its operation. This same conclusion follows, he urges, from the proper interpretation of *δυνάμει ζωὴν ἔχοντος*. What is inseparable from the animate body, and therefore to be included in the definition, is merely the capacity or aptitude to operate, as distinct from actual operation or its absence. At the same time *δύναμις* does not mean capacity separated from act, but capacity joined with act. In his own words, "forma operans est actus primus cum secundo, cum operatio sola sit secundus actus." In *Metaph.* 1050 a 21—23 A. himself identifies *ἐνέργεια* with *ἔργον*, from which it gets its name, adding that it tends to perfection, *συντείνει πρὸς τὴν ἐντελέχειαν*.

a 28. ὀργανικόν, provided with organs, whereby are meant instruments subserving the several faculties (cf. the argument in 429 a 26 sq. that *νοῦς* unlike the sensitive faculty has no such *ὄργανον*) and adapted to the performance of function (*τοῦ ἔργου ἕνεκα*). Cf. Alex., *ἀπ. καὶ λύσ.* 54, 9 *τὸ δ' ὀργανικόν ἐστιν ὃ ἔχει μόρια διαφερούσαις ἐνεργείαις ὑπηρετεῖσθαι δυνάμενα*, and Alex. *De An.* 16, 11 sq. Not only are what we call "organs of sense" *ὄργανα* to A., but also any parts of the living body which promote vital functions (as mouth, heart, foot) and, as A. goes on to show, the parts of plants, especially the roots. See *note* on 407 b 25 (*δεῖ γάρ κτέ.*). This conception is stereotyped in the term "sense-organs."

412 b 1 ὄργανα δὲ...4 τὴν τροφήν. This is a parenthetical remark showing that the parts of plants serve the same purpose as the recognised "organs" of animals. It is almost as much a footnote incorporated in the text as 412 a 10—11. The simplicity of the structure of plants is accounted for *De Part. An.* II. 10, 655 b 37 sqq.

b 2. περικαρπίου. The pericarp in most edible fruits (e.g. apples, plums,

grapes) is what we call the fruit; in nuts it is the shell, in peas and beans the pod. With more precision from the botanical standpoint, A. reserves the term *καρπὸς* for that which, when sown, will produce the plant after its kind, as the apple pip or the grape stone. The leaf, as a protection of the "pericarp," is well exemplified in the hazel-nut.

b 3. αἱ δὲ ῥίζαι τῷ στόματι ἀνάλογον. Cf. *De Part. An.* IV. 10, 686 b 28 sqq., especially 686 b 32 *καὶ τὸ κατὰ τὴν κεφαλὴν μόριον τέλος ἀκίνητόν ἐστι καὶ ἀναίσθητον, καὶ γίνεται φυτόν, ἔχον τὰ μὲν ἄνω κάτω, τὰ δὲ κάτω ἄνω· αἱ γὰρ ῥίζαι τοῖς φυτοῖς στόματος καὶ κεφαλῆς ἔχουσι δύναμιν κτέ.*

b 4. κοινὸν ἐπὶ πάσης ψυχῆς. Cf. *supra* 412 a 5 *κοινότατος λόγος*. Again it becomes clear that we are not so much laying down the nature of soul as indicating the scope of the enquiry.

412 b 6—9. There is no need to question the unity of soul and body, the one being form, and the other the matter corresponding to it; for that which is in the fullest sense actual possesses being and unity [§ 7].

b 6. διὸ καὶ οὐ. With the foregoing view of the relation of soul to body and that of form to its appropriate matter, it becomes idle to enquire whether soul and body form a unity or are absolutely distinct. The analysis began with concrete things (*οὐσίαι*), which A. calls individuals (*ἄτομα*), implying that they cannot be further divided except in thought. We cannot be too often reminded that matter and form are not things, but "causes" or "principles" of things, distinguishable in thought or reasoning and in rational description (*λόγῳ*), but not by sense.

b 7. τὸν κηρὸν καὶ τὸ σχῆμα. The waxen impression may be regarded either as so much wax (*οὐσία ὡς ὕλη*) or as a form (*σχῆμα*) impressed by the seal. But, howsoever viewed, the thing is numerically one and the same. **οὐδ' ὅλως.** And, as with the wax and the impress, so universally with every concrete existence, whether sensible (*αἰσθητὸν*) or cogitable (*νοητόν*). In *Metaph.* 1075 b 34 A. complains that no preceding philosopher had explained what it is that makes soul and body, or, generally, the thing and its form one: *ἔτι τίνι οἱ ἀριθμοὶ ἓν η ἡ ψυχὴ καὶ τὸ σῶμα καὶ ὅλως τὸ εἶδος καὶ τὸ πρᾶγμα, οὐδὲν λέγει οὐδείς.* He justifies his contention at greater length *Metaph.* 1045 a 7—b 23.

b 8. τὸ οὗ ἡ ὕλη. Cf. b 20 *infra ὕλη ὄψεως*, "the form of which it is the matter," i.e. the form correlative to the matter. Special care is needed or else this expression may be misleading. Properly both the form and the matter are form and matter of the concrete thing, and even where A., as here, incautiously expresses himself, this and nothing else can be his meaning.

b 8. τὸ γὰρ ἕν. The terms "one" and "unity" are susceptible of various meanings, which are discriminated in *Metaph.* Δ., c. 6 and I. cc. 1—3, 1052 a 15 sqq. A. holds that unity is a universal (*καθόλου*). There is no such separate real thing as unity, but there is no real thing of which unity cannot be predicated in some degree, for things possess this attribute in varying degrees. But that which is most properly said to be one and self-identical is *ἐντελέχεια*, that is, the complete actualisation or perfected reality. Contrasted with this, every previous stage of development presents something less perfect, something potential, but half realised and therefore possessing less unity. **καὶ τὸ εἶναι.** Being, like unity, is a term of various meanings. A.'s enumeration is (1) Being in the sense of the categories, substance and its appendages (quality, quantity, relation), (2) Being in the sense of truth, to which "Not-being" in the sense of falsehood is opposed, (3) Being in the sense of accident (*συμβεβηκὸς*) or incidental fact, (4) Being in the contrasted senses of "actual" and "potential" (cf. *Metaph.* Δ., c. 7, E., c. 2, Θ., c. 1, 1045 b 27 sqq.). In the present passage

A. tells us that the proper sense of the term is to denote actuality, as distinguished, under the last head, from potential Being.

412 b 10—25. This then is the account of soul in general terms. Now to explain it. Soul is substance, regarded as form, that is, the quiddity or the "what-made-it-so" of an animate body. This A. illustrates by taking two things which his definition of natural body excludes, the eye and the axe; the one a mere part of a natural body as whole, the other a lifeless instrument. As vision makes the former what it is, a seeing eye, and its mere cutting makes the latter what it is, these may be regarded as, so to say, the "soul" of eye and axe respectively. Similarly it is in activity or active operation that the soul of the natural body provided with organs, the animal or plant, consists [§§ 8, 9].

b 10. **οὐσία γὰρ ἡ κατὰ τὸν λόγον** = *οὐσία ὡς εἶδος*, substance expressed in the sense of form or notion. Conversely such definition is called *ὁ λόγος τῆς οὐσίας.* A true logical definition aims at expressing the form of the thing. It is the form which makes a thing what it is. But as this form, in order to exist, must be realised in matter (403 b 3) *οὐσία κατὰ τὸν λόγον* is only a factor of concrete existing things, 424 a 24 *ᾗ τοιονδί, καὶ κατὰ τὸν λόγον.* Cf. 414 a 9, where *μορφή, εἶδός τι, λόγος* and *οἷον ἐνέργεια* are equivalent expressions. The determining use of *κατὰ* has been noted *ad* 404 b 5. Cf. *Metaph.* 1089 a 31 sq. *τὸ ὂν τὸ κατὰ τὰς οὐσίας λεγόμενον*, Being predicated of substances.

b 11. **τὸ τί ἦν εἶναι.** This is merely an elaborate technical designation of the specific form or formal cause. The origin of the phrase is plain. A. used (1) the phrase *τὸ τί ἐστι*, "the what is it?", for any generic or specific form, any rational description which will answer the question *τί ἐστι;* Also, as we saw 408 a 25, he used (2) the phrase *τὸ τινὶ εἶναι* for the abstract notion, the concept not embodied in matter, the immaterial form of a concrete thing. Again (3) the use of *ἦν ἄρα* = "it is, as we saw," in recognition of a fact that has existed all along, is well known. The technical phrase before us combines in a manner all the modes of expression; *τὸ εἶναι τοιῳδὶ σώματι*, like (2), will be the abstract being of a given body; *τὸ τί ἐστιν εἶναι*, if found, would mean the fact of its being what it is. When for *ἐστι*, *ἦν* is substituted, we get (3) "its being what it was all along," i.e. what the thing is in its true essence. Thus *τὸ τί ἦν εἶναι τῷ τοιῳδὶ σώματι* is merely an equivalent of *τὸ εἶδος τοῦ τοιουδὶ σώματος.* See Zeller's elaborate disquisitions *Aristotle, Eng. Tr.* vol. I. p. 217, *n.* 1, p. 219, *n.* 1. The student should note that the predicate of *εἶναι* both in (2) and (3) is invariably in the dative and that in (2) the article is never found with this dative (*τὸ αἰσθητικῷ εἶναι*, but not *τὸ τῷ αἰσθητικῷ εἶναι*). As *τόδε τι* generalises "this man," "this horse" etc., so *τὸ τί ἦν εἶναι* simply generalises *τὸ σαρκὶ εἶναι, τὸ ἀνθρώπῳ εἶναι κτέ., τί ἦν* being predicate, like *σαρκὶ* and *ἀνθρώπῳ*.

b 11. **τῷ τοιῳδὶ σώματι.** When the logical essence is expounded, the relation of soul to the animate body furnishes a typical illustration: cf. *Metaph.* 1035 b 14—16, 1041 b 4—9, 1043 a 35—b 4.

b 12. **φυσικόν.** Instead of being, as it is, artificial (*τεχνητόν*).

b 13. **τὸ πελέκει εἶναι**, axeity or axehood, if we might coin the words; axe in the abstract or the notion or concept of axe; that is, what essentially belongs to an axe as such (and this may serve to explain the dative). **τοῦτο**, int. *τὸ πελέκει εἶναι*: the position of the word is due to chiasmus. The *οὐσία* of the inanimate axe would be called *ψυχή* in the case supposed. Zabarella, however, takes *ἡ ψυχή* to be subject and *τοῦτο* to be predicate: the sentence is then parenthetical, "and the soul of the animal is this," viz. its quiddity. This agrees with b 16, where *ἡ ψυχή* is the soul of the animal, but in the parallel illustration, b 19, it is said that eyesight would be the soul of the eye, and 413 a 1 the

capacity of the tool is put on a level with eyesight. **χωρισθείσης δὲ ταύτης**, int. *τῆς οὐσίας*. Take this away, i.e. deprive the axe of its capacity for cutting, and it would be a sham axe. This is just as true of the lifeless instrument as it is of the supposed animate instrument, as will be shown later (see *note* on b 15, *νῦν δ' ἐστὶ πέλεκυς*): only in the instrument spoiled for use, e.g. the blunted axe or ruined house, there is not that immediate disintegration which attends the animal body when life has left it: cf. 411 b 9. Since this passes unnoticed in the text, it would seem that the whole clause, b 13 *χωρισθείσης*...14 *ὁμωνύμως*, is a mere accessory to the mention of the quiddity (cf. b 20 *ἧς ἀπολειπούσης*). It is on the quiddity alone that the comparison really hinges.

b 14. **ὁμωνύμως**, "in an equivocal, i.e. ambiguous, sense." By homonyms A. denotes things of different nature which have the same name (as bank, form, *λόφος*, *κόρη*), whereas synonyms are identical both in name and nature.

b 15. **νῦν δ' ἐστὶ πέλεκυς**. But in reality the axe is an axe, a lifeless instrument (Philop. 221, 4 *ἄψυχος ὤν*) and not a living body: Them. 42, 25 H., 78, 4 sq. Sp. *νῦν δὲ κἂν σώζηται ἡ μορφή, πέλεκυς μέν ἐστι, ζῷον δὲ οὐκ ἔστιν*. Cf. Alex. *De An. Mantissa* 102, 23 sqq. Them. does not stop to enquire what such a lifeless instrument is when it has lost its shape, edge and power of cutting; but if all things are defined by their function, it would under those circumstances be spoilt for use. If so, I cannot really see that it is more truly an axe than the wooden saw is a saw: *Meteor.* IV. 12, 390 a 10 *ἅπαντα δ' ἐστὶν ὡρισμένα τῷ ἔργῳ· τὰ μὲν γὰρ δυνάμενα ποιεῖν τὸ αὐτῶν ἔργον ἀληθῶς ἐστιν ἕκαστα, οἷον ὁ ὀφθαλμὸς εἰ ὁρᾷ, τὸ δὲ μὴ δυνάμενον ὁμωνύμως, οἷον ὁ τεθνεὼς ἢ ὁ λίθινος· οὐδὲ γὰρ πρίων ὁ ξύλινος, ἀλλ' ἢ ὡς εἰκών*. From this we may infer that the point of *νῦν δὲ* is not to contrast what would happen (1) to a lifeless instrument, (2) to an animate instrument, under the circumstances implied by *χωρισθείσης δὲ ταύτης*, a view to which some colour is lent by the remarks of Simpl. 93, 16 sqq. The question at issue is whether (*a*) *νῦν δ'* refers back to the initial supposition, b 11 *καθάπερ εἴ τι κτέ.*, and so corrects the hypothesis by showing that the comparison does not hold and why; or whether it refers to the clause immediately preceding, b 13 *χωρισθείσης δὲ ταύτης κτέ.* In the latter case *νῦν δ'* might be taken as equivalent either (*β*) to *χωρισθείσης τῆς τμητικῆς δυνάμεως*, "although its cutting power was gone," or (*γ*) to *μὴ χωρισθείσης τῆς τμητικῆς δυνάμεως = ἐπεὶ οὐκ ἐχωρίσθη κτέ.* Torstrik, who allows that the first of the three alternatives gives some sense, was deterred from adopting it because (1) the reader could hardly avoid associating *πέλεκύς ἐστιν* with b 14 *οὐκ ἂν ἔτι πέλεκυς ἦν*, which would lead him astray as to the sense, and (2) because the clause with *γάρ*, instead of proving that the axe is not a natural body, proves that its form is not a soul. Accordingly he proposed to read *νῦν δ' οὐκ ἔστιν* (int. *ψυχὴ τοῦτο*), which he would join closely with b 13 *καὶ ἡ ψυχὴ τοῦτο*, so that the next clause, b 15 *οὐ γὰρ κτέ.*, would follow more directly. This seems hypercritical. Another attempt to make *νῦν δ'* antithetical to b 14 *οὐκ ἂν ἔτι πέλεκυς ἦν* is that of M. Rodier, who translates: "Mais, en fait, la hache existe (quoique séparée, en un sens, de sa quiddité et de sa fonction, parce que l'essence de la hache, qui n'est pas un corps naturel, ne contient pas la faculté de frapper ou de couper de soi-même)." This rendering seems to me misleading, for *πέλεκυς* must be predicate, not subject; and, even if it were subject, we should require *ἔστιν*, not *ἐστίν*, as the verb. The difference between the lifeless axe and the supposed animate axe is that the former does not, but the latter does, possess the power to strike and cut of itself or on its own initiative. Hence, as M. Rodier says, when it has lost its power of cutting of itself "la hache existe sans cette faculté, précisément parce qu'elle n'est pas un animal, et que son essence ne contient pas la faculté de se

mettre en mouvement d'elle-même." In other words, the axe still exists as an axe: is, in fact, an axe and nothing more, the interpretation of Them., which M. Rodier professes to reject.

b 15. **τοιούτου**, like the axe just mentioned, i.e. an artificial body (*τεχνητοῦ*). But soul, the definition carefully states, belongs to a natural body, *σώματος φυσικοῦ* 412 a 27.

b 16. **τοιουδί**, of a given kind, namely, that designated **ὀργανικὸν** in b 6 *supra*.

b 16 **ἔχοντος...17 ἐν ἑαυτῷ**. This addition renders more explicit the definition of animate body as *φυσικοῦ δυνάμει ζωὴν ἔχοντος* given above a 20, showing that it includes the possession of *τὴν δι' αὑτοῦ τροφήν τε καὶ αὔξησιν καὶ φθίσιν* a 14. A. uses automata by way of illustration, *Pol.* 1253 b 33 sqq.

b 18. **ἐπὶ τῶν μερῶν**, "in the case of the parts (of the body)" above spoken of as *ὄργανα* and defined by their functions, 416 a 5. Each of these parts is animate; since the whole animal possesses soul, so must every part, if it is to perform its function: *Metaph.* 1036 b 28 *αἰσθητὸν γάρ τι τὸ ζῷον, καὶ ἄνευ κινήσεως οὐκ ἔστιν ὁρίσασθαι, διὸ οὐδ' ἄνευ τῶν μερῶν ἐχόντων πως. οὐ γὰρ πάντως τοῦ ἀνθρώπου μέρος ἡ χείρ, ἀλλ' ἡ δυναμένη τὸ ἔργον ἀποτελεῖν, ὥστε ἔμψυχος οὖσα· μὴ ἔμψυχος δὲ οὐ μέρος*, 1035 b 16—18, 23—25, *De Part. An.* I. 1, 640 b 35 *ἔτι δ' ἀδύνατον εἶναι χεῖρα ὁπωσοῦν διακειμένην, οἷον χαλκῆν η ξυλίνην, πλὴν ὁμωνύμως, ὥσπερ τὸν γεγραμμένον ἰατρόν.* **εἰ γὰρ ἦν...19 αὐτοῦ ἡ ὄψις**. That is, sight is to the eye what soul is to the body, i.e. its form.

b 20. **ὁ δ' ὀφθαλμὸς ὕλη ὄψεως, ἧς ἀπολειπούσης οὐκέτ' ὀφθαλμός**. The word *ὀφθαλμὸς* is used first for the pupil, called *κόρη* below 413 a 3, the material condition of sight, and then for 'the seeing eye,' the concrete thing. This sudden change in meaning has puzzled readers, and Torst. proposes to insert after *ὁ δ' ὀφθαλμὸς* the words *τὸ σύνολον, ἡ δὲ κόρη* (see critical *notes*). This gives exactly the sense required "while an eye is [a combination of the two and the eyeball is] the matter of vision." Torst. was no doubt influenced by Them., "qui totum locum laudat," as he thinks. Themistius' words are (42, 38 H., 78, 23 Sp.) *εἰ γὰρ ἦν ὁ ὀφθαλμὸς ζῷον, [ἡ] ψυχὴ ἂν αὐτοῦ ἡ ὄψις ἦν· αὕτη γὰρ οὐσία ὀφθαλμοῦ καὶ εἶδος καὶ μορφή, ὁ δὲ ὀφθαλμὸς τὸ σύνολον, τὸ δὲ σῶμα τοῦ ὀφθαλμοῦ ὕλη τῆς ὄψεως.* I see no reason for thinking that Them. had a different text from ours: as usual, he is amplifying and explaining. Even with some such supplement, there is an informality of language (as discussed before, 412 b 8, *note*). It is as if he said $A+B$ (*τὸ σύνολον*) is A, *ὕλη*, of B, *εἶδος*, the *ὕλη* and *εἶδος* together making up the *σύνολον*. See 413 a 2 sq. With *ἧς ἀπολειπούσης* compare what was said of the axe 412 b 13 *χωρισθείσης δὲ ταύτης* (int. *τῆς οὐσίας τοῦ πελέκεως*). With the usual punctuation *ἧς* is naturally referred to *ὄψεως*: with that of Bywater (*J. of Ph.* XVII. 54) *ἧς* would refer back to b 19 *οὐσία ὀφθαλμοῦ ἡ κατὰ τὸν λόγον*, but, as these words are there introduced to define *ὄψις*, the result is the same, whichever punctuation be adopted. Very similar is the language of *De Part. An.* I. 1, 641 a 18 *ἀπελθούσης γοῦν* [int. *τῆς ψυχῆς*] *οὐκέτι ζῷόν ἐστιν, οὐδὲ τῶν μορίων οὐδὲν τὸ αὐτὸ λείπεται, πλὴν τῷ σχήματι μόνον, καθάπερ τὰ μυθευόμενα λιθοῦσθαι.*

b 22. **δεῖ δή**. "Now what holds good of the part must be applied to the living body taken as a whole" (Wallace, p. 63).

b 23. **ὡς τὸ μέρος πρὸς τὸ μέρος**, i.e. as the particular mode of perception, sight, stands to the particular organ, the eye. The proportion is, roughly stated: as part of soul is to part of body, so the whole of soul is to the whole of body. See *notes* on 408 a 11, 411 b 15.

b 24. **ἡ ὅλη αἴσθησις**, sensation as a whole, of which the particular sensory functions are the parts. Each special sense is a faculty residing in some part

of the living body, which serves it as an instrument or organ. So sensation in general, the sum-total of the faculties which constitute an animal sentient, employs the whole body, *quâ* sensitive, as its organ and instrument. Cf. *De Part. An.* I. 5, 645 b 14 ἐπεὶ δὲ τὸ μὲν ὄργανον πᾶν ἕνεκά του, τῶν δὲ τοῦ σώματος μορίων ἕκαστον ἕνεκά του, τὸ δ' οὗ ἕνεκα πρᾶξίς τις, φανερὸν ὅτι καὶ τὸ σύνολον σῶμα συνέστηκε πράξεώς τινος ἕνεκα πλήρους.

b 25. **ᾗ τοιοῦτον**, i.e. ᾗ αἰσθητικόν, '*quâ* sensitive.'

412 b 25—27. What bodies, we may ask, have souls? Living bodies only, for dead bodies as dead are excluded by the terms of the definition. Nor does it apply to the seed or germ of animals or plants which is not as yet possessed of life, although it has the capacity or promise of becoming so hereafter [§ 10].

b 26. **τὸ δυνάμει** [int. τοιοῦτον] **ὂν ὥστε ζῆν**, a variant on τὸ δυνάμει ζωὴν ἔχον, "that which has the capacity for life," as required by the definition.

b 26. **τὸ δὲ σπέρμα καὶ ὁ καρπός.** At first sight it would seem as if these, too, were potentially "possessed of life." But in fact they are not as yet bodies (in the sense of the definition) at all; their potentiality is a potentiality of becoming bodies which (when developed) will be "potentially" possessed of life. Them. (43, 10—14 H., 79, 8—14 Sp.) compares the germ to the steel which is not yet a saw, although out of it a saw may hereafter be shaped. A. discusses the question whether the seed has life in *De Gen. An.* II. I. 735 a 4 sqq. and decides, as here, that it has life potentially. Again, in *Metaph.* Θ., c. 7 he asks πότε δὲ δυνάμει ἐστὶν ἕκαστον καὶ πότε οὔ, and the first instance cited shows that he is thinking of the problem to which we have now come in *De A.*: 1048 b 37 οἷον ἡ γῆ ἆρ' ἐστὶν ἄνθρωπος δυνάμει; ἢ οὔ, ἀλλὰ μᾶλλον ὅταν ἤδη γένηται σπέρμα, καὶ οὐδὲ τότε ἴσως. This brief answer is further elucidated 1049 a 12 καὶ ὅσων δὴ ἐν αὐτῷ τῷ ἔχοντι, ὅσα μηδενὸς τῶν ἔξωθεν ἐμποδίζοντος ἔσται δι' αὐτοῦ. οἷον τὸ σπέρμα οὔπω· δεῖ γὰρ ἐν ἄλλῳ καὶ μεταβάλλειν. ὅταν δ' ἤδη διὰ τῆς αὐτοῦ ἀρχῆς ᾖ τοιοῦτον, ἤδη τοῦτο δυνάμει· ἐκεῖνο δὲ ἑτέρας ἀρχῆς δεῖται.

b 27. **δυνάμει τοιονδί.** Two stages of potentiality are implied: the seed is δυνάμει the body of the animal or plant, and again this body, so long as it has soul in it, is potentially possessed of life, δυνάμει ζωὴν ἔχον. As already pointed out in note on 412 a 20, the present passage supports the interpretation given there, for otherwise the two grades of potentiality could not be kept distinct, there would be no difference between the seed and the plant. But the dead body has neither the first nor the second grade of potentiality. In what sense ζῶν is δυνάμει νεκρὸν and a corpse δυνάμει ζῶν, the necessary condition being φθορὰ and reversion to the matter out of which the body was constituted, is explained *Metaph.* 1044 b 34—1045 a 6.

412 b 27—413 a 10. Recapitulation of the mutual relations of (1) waking activity, (2) soul, (3) body [§ 11]. The soul and the parts of the soul, which are related to the body and the parts of the body in this way as specific form to specific matter, are incapable of existing separately. If, however, any part of the soul is not so related to the body, it may have a separate existence [§ 12]. There is the further question whether the soul as the specific form of the body stands to it as the sailor to the vessel [§ 13].

412 b 28. **ἡ ἐγρήγορσις.** As we were told before (412 a 25), this is a fuller actuality than the passive possession of the soul in sleep.

413 a 1. **ἡ ὄψις**, the faculty of sight, as distinguished from ὅρασις, the act of seeing. **ἡ δύναμις τοῦ ὀργάνου.** The reference is to the cutting power of the axe (even if not being used), as distinguished from τμῆσις, the operation of cutting. Cf. *Metaph.* 1019 b 13 καὶ γὰρ ἐν τοῖς ἀψύχοις ἔνεστιν ἡ τοιαύτη δύναμις,

οἷον ἐν τοῖς ὀργάνοις· τὴν μὲν γὰρ δύνασθαί φασι φθέγγεσθαι λύραν, where the mention of the lyre shows that the reference is to instruments made by art, and not, as in *De A*. 424 a 25, 28, *De Resp*. 12, 476 a 25, to parts or organs of a living body.

a 2. τὸ δὲ σῶμα. The body corresponds neither to the actual operation of cutting, seeing, etc., nor to the capacity of cutting, seeing, etc. The existence is merely potential. We may note the change in the meaning of *σῶμα*. In 412 a 11—15 it included animate and inanimate bodies; then it is narrowed to meaning what is now called *ζῷον*, body possessed of soul; here it means body to the exclusion of soul. Cf. the irregular use of *ὀφθαλμὸς* for *ὕλη ὄψεως*, 412 b 20. See 415 b 18, *note*.

a 4. χωριστὴ τοῦ σώματος. This agrees with *De Gen. An.* II. 3, 736 b 21—27 and the exception following 413 a 6 sq. finds its counterpart in 736 b 27—29.

a 5. ἐνίων γὰρ, int. *τῶν ζῴων*.

a 6. τῶν μερῶν ἐστιν αὐτῶν, "belongs to the parts themselves" as opposed to the whole body. If these words are rightly placed, we suddenly talk of "parts (*μέρη*) of the body," while just before, a 4 *ἢ μέρη τινὰ αὐτῆς*, we were talking of parts of soul; an anticipation of b 16, where A. speaks of plants and animals having a certain power of living and functioning after division, such organisms being, as it were, built in compartments. The above interpretation is due to Professor H. Jackson and seems to me unquestionably superior to those of the Greek commentators, most of whom apparently make *ἐνίων* agree with *μερῶν*. Thus Them. 43, 23 H., 79, 27 Sp. *ἐνίων γὰρ μερῶν τοῦ σώματος ἔνια μέρη τῆς ψυχῆς προφανῶς ἐντελέχεια καὶ τελειότης, ὥσπερ ἡ ὄψις τοῦ ὀφθαλμοῦ*: cf. Philop. 223, 29 sq. Simplicius, however, though his explanation is substantially the same, seems to admit the possibility of taking *ἐνίων* apart from *τῶν μερῶν*: (95, 15) *ἐνίων γὰρ λέγων ψυχῶν οὕτως ἔχειν τὴν ἐντελέχειαν, ὡς αὐτῶν τῶν σωματικῶν οὖσαν μερῶν*. The words of Soph. (44, 29) *ἔνια γὰρ τῶν τῆς ψυχῆς μορίων ἐντελέχειαι αὐτῶν τῶν μερῶν ἐστι τοῦ σώματος* possibly point to a reading *ἔνια γὰρ ἐντελέχειαι τῶν μερῶν ἐστὶν αὐτῶν*, but I see no reason to suspect that Them., Simpl., Philop. had a text different from our own. What these authorities make A. say is no doubt true of the nutritive and sensitive faculties (cf. 403 a 10 sqq.), but I fail to see (1) how such a meaning can be got from our text, (2) why, if this were the meaning, A. should use *γάρ*. A. would be merely repeating his statement and not assigning a cause. Whereas the fact that, if the bodily parts are divided, there is, in certain cases, a corresponding division of the *ἐντελέχεια* or soul, does go to strengthen the conclusion 413 a 3 *ὅτι μὲν οὖν κτέ*.

a 6. ἔνιά γε. By *ἔνια* = "some" A. in reality means one only, the thinking part, the highest form of intellectual activity, *νοῦς*, which is declared to be *χωριστὸς* 429 b 5, 430 a 17; cf. 408 b 29.

a 8. ἔτι δὲ ἄδηλον. Is this a new question? In other words, does *ἔτι δὲ* mean "and again" or should *ἔτι* be taken closely with *ἄδηλον* in the sense of *ἔτι καὶ νῦν, ἔτι καὶ ἐκ τῶν παρόντων*? Cf. 413 b 25 *οὐδέν πω φανερόν*. On the first view, a new question would be propounded, viz. whether the soul, as we have defined it, is related to the body as a sailor to a ship. At first sight this seems inconsistent with 413 a 3—7. What A. has just declared to be quite certain is that some parts of the soul cannot be separated from the body, but others may, if they satisfy certain conditions. Anyone who had carefully followed the course of the previous argument would expect to hear that the soul is not related to the body as a sailor to a ship. On the other hand, if there is nothing to hinder certain parts of the soul from being separable from the body, it would be

natural to go further and ask if this possibility extends to the whole soul. In the absence of any qualification *ἡ ψυχή* must be understood of the soul as defined in this chapter. But we shall find that there are other vital functions besides those of self-nourishment and independent growth and decay by which life was defined, 412 a 14 sq. Perhaps *ἄδηλον* has reference to these. A similar question is seriously handled in *Metaph.* Z., c. 11, the question there proposed being *ποῖα τοῦ εἴδους μέρη καὶ ποῖα οὔ, ἀλλὰ τοῦ συνειλημμένου;* A. remarks (1036 a 31 sqq.) that, when the form of a circle is realised in heterogeneous material, as brass, wood and stone, it is clear that none of these materials can be parts of the *οὐσία* of circle, because it is found separated from them. Even where this is not so, that is, where the form is not presented in different materials, the case may still be the same as it would be if all the circles ever seen were of brass, though under those conditions the act of mental abstraction would be rendered difficult. His illustration has a direct bearing on the passage before us: (1036 b 3) *οἷον τὸ τοῦ ἀνθρώπου εἶδος αἰεὶ ἐν σαρξὶ φαίνεται καὶ ὀστοῖς καὶ τοῖς τοιούτοις μέρεσιν· ἆρ' οὖν καὶ ἐστὶ ταῦτα μέρη τοῦ εἴδους καὶ τοῦ λόγου; ἢ οὔ, ἀλλ' ὕλη, ἀλλὰ διὰ τὸ μὴ καὶ ἐπ' ἄλλων ἐπιγίγνεσθαι ἀδυνατοῦμεν χωρίσαι. ἐπεὶ δὲ τοῦτο δοκεῖ μὲν ἐνδέχεσθαι, ἄδηλον δὲ πότε, ἀποροῦσί τινες ἤδη κτέ.* The doubt how much is form and how much is matter may be extended to circle and triangle; hence some, i.e. Platonists, would reduce all sensible existence to numbers, an hypothesis which A. explains at some length, criticises and finally rejects 1036 b 8—23. He emphatically reiterates his doctrine of material forms: *ἔνια γὰρ ἴσως τόδ' ἐν τῷδ' ἐστίν, ἢ ὡδὶ ταδὶ ἔχοντα.* Then, evidently reverting to the illustration with which he started, he rejects unequivocally the supposition that man or animal is analogous to the circle and separable from the material, i.e. corporeal, parts which we know. The cases are not parallel: *αἰσθητὸν γάρ τι τὸ ζῷον καὶ ἄνευ κινήσεως οὐκ ἔστιν ὁρίσασθαι, διὸ οὐδ' ἄνευ τῶν μερῶν ἐχόντων πως κτέ.* If the conclusion of *Metaph.* Z., c. 11 represents A.'s mature judgment, it may be plausibly argued that in our present passage *ἔτι δὲ ἄδηλον* is a mere phrase of the lecture-room, like *σκεπτέον ὕστερον*, an affectation of uncertainty because the writer is stimulating, without satisfying, curiosity. Cf. *Metaph.* 1026 a 8 *ἀλλ' εἰ ἀκινήτων καὶ χωριστῶν ἐστί* [int. *θεωρητικὴ ἡ μαθηματική*], *νῦν ἄδηλον*: A.'s own opinion on the point is abundantly clear from other parts of the *Metaphysics*, as well as from the partial pronouncement 6 lines lower down (1026 a 14 sq.), where the text is not above suspicion. Alex. Aphr. *De An.* 15, 9 sqq. refuses to allow the analogy between the soul and the pilot, unless we substitute *ἡ τέχνη ἡ κυβερνητικὴ* for the pilot himself. In that case alone (15, 11) *εἴη ἂν ὡς ἕξις τις καὶ εἶδος ἐν ὕλῃ ἡ ψυχὴ ἐν τῷ σώματι (οὕτως γὰρ αἱ ἕξεις εἰσὶν ἐν τοῖς ὧν εἰσὶν ἕξεις· ἀσώματοί τε γάρ εἰσι καὶ ἀχώριστοι τῶν ἐν οἷς εἰσίν).* On the other hand, if we take it of the pilot himself, he says, the soul will be made corporeal (*σῶμα*) and will be located in a distinct part of the body, so that the whole body will not possess soul or consciousness: and generally he urges the objections which A. himself brings against his predecessors in *De A.* I., c. 3. Thus Alex. preserves consistency and even interprets *ἄδηλον εἰ* by *οὐχ οἷόν τε*; but some considerations may be admitted on the other side. The language of 1036 b 7 is cautious: A. does not there commit himself either way on the general question. Remnants of Platonism turn up oddly elsewhere in A. and, when Alex. substitutes *ἡ κυβερνητικὴ* for *ὁ κυβερνήτης*, we are forcibly reminded of *Metaph.* 1075 a 11—15, where A. gives the preference to the arranger and not to the arrangement. In this treatise the problem of the origin of life does not concern us and after 408 b 18, 413 b 25—27 A. makes no dogmatic statement as to whether soul or any part of it is an immaterial entity. See 431 b 17—20. As to the illustration, it

is quite idle to minimise its meaning. If, as some think, comparing *Phys.* VIII. 4, 254 b 30, it only means that, as the sailor steers the ship, so the soul rules, controls and moves the body, A. would not have said *ἄδηλον*, see 407 b 18. The perplexity of the Greek commentators may be inferred from the divergence of their views. Them. (43, 28 sqq. H., 80, 5 sqq. Sp.) refers the whole question to *νοῦς χωριστός*, as if *ἡ ψυχή* stood for *ἡ νοητική*, and as if this could be *σώματός τινος ἐντελέχεια*, but *χωριστή*. Simpl. (96, 8 sqq.) gives an explanation which would have better suited the *ἐνιά γε* of a 6. He of course has no patience with *ἄδηλον*, but for the opposite reason to Alex. Aphr.; (96, 10) *διὰ τί οὖν ἄδηλον ἔτι εἶπεν, εἰ καὶ πλάσαι χαλεπόν; καὶ γὰρ ἐναργῶς ἡ θεωρητικὴ οὐδὲ ὡς ὀργάνῳ χρῆται.* Philop. (224, 12 sqq.) proposes various explanations mutually inconsistent and does not omit to criticise Alex.

CHAPTER II.

This chapter is mainly devoted to a fresh discussion, elucidation and justification of the definition of soul contained in c. 1. By way of introduction, a few logical remarks are prefixed on the value of definitions in general.

413 a 11. **ἀσαφῶν μὲν φανερωτέρων δέ.** Concrete objects, which are here meant, are less distinct to thought than universals, but are more obvious, being earlier observed and more familiar to us. The former are *αἰσθητά*, while general notions or concepts (which according to A. are formed by the mind from them) are *νοητά*. The former are particulars, or individual things (*καθ' ἕκαστα*), while the latter are universals (*καθόλου*). Not only are concrete objects 'indistinct' (*ἀσαφῆ*), but also 'confused' (*συγκεχυμένα*): a fact which all subsequent psychologists have emphasised following Plato, *Rep.* 523 E sqq. The meaning would have been clearer if *φύσει* or *κατὰ τὸν λόγον* had been added to *ἀσαφῶν* and *ἡμῖν* to *φανερωτέρων*.

a 12. **τὸ σαφές.** The superior clearness (*σαφήνεια*) of mental concepts is emphasised in Plato, *Rep.* 523 B sqq. **κατὰ τὸν λόγον.** What is better known by reason or reasoning is frequently opposed to what is known by sense (*κατὰ τὴν αἴσθησιν*), as theory is to facts. Cf. *Pol.* 1328 a 20 *διὰ τῶν λόγων*)(*διὰ τῆς αἰσθήσεως*; *de Part. An.* II. 8, 653 b 22, 30. **γνωριμώτερον,** int. *ἁπλῶς* or *τῇ φύσει*. In *Eth. Nic.* 1095 b 2, the distinction is very clearly marked between what is better known to us (*ἡμῖν*), and what is better known absolutely (*ἁπλῶς*); *ἀρκτέον μὲν γὰρ ἀπὸ τῶν γνωρίμων, ταῦτα δὲ διττῶς· τὰ μὲν γὰρ ἡμῖν τὰ δ' ἁπλῶς.* Both there and here A. is discussing method: where are we to start in beginning the study of ethics, psychology or any similar subject? Universals are combined and confused together in the complex object of sense. A.'s theory of learning amounts to this, that we start with the 'data' of sense, indistinct and confused, when tested by the standard of thought (*τῷ λόγῳ*) and disentangle from their complexity what is more knowable in the order of nature. By induction and abstraction we thus arrive at concepts, principles and causes which are more truly objects of knowledge. Cf. Zeller, *Aristotle*, I. 204—209 Eng. Tr.; Grote, pp. 196, 239, 332, 2nd edition (vol. I. 282, 344, II., 5 1st edition). The process is described by A. in many passages: *Anal. Post.* I. 2, 71 b 33 sqq., *Top.* VI. 4, 141 b 3 sqq., *Metaph.* 1029 b 4 *ἡ γὰρ μάθησις οὕτω γίγνεται πᾶσι διὰ τῶν ἧττον γνωρίμων φύσει εἰς τὰ γνώριμα μᾶλλον*, and b 7 (where *αὐτῷ γνωριμωτέρων* stands opposed to *τὰ τῇ φύσει γνώριμα*). A. continues (1029 b 8) *τὰ δ' ἑκάστοις γνώριμα καὶ πρῶτα πολλάκις ἠρέμα ἐστὶ γνώριμα, καὶ μικρὸν ἢ οὐδὲν ἔχει*

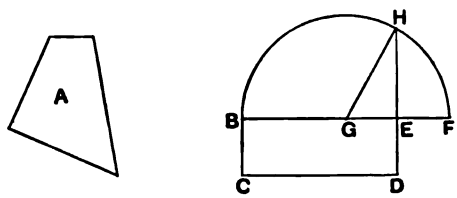
τοῦ ὄντος. ἀλλ' ὅμως ἐκ τῶν φαύλως μὲν γνωστῶν, αὐτῷ δὲ γνωστῶν, τὰ ὅλως γνωστὰ γνῶναι πειρατέον, μεταβαίνοντας διὰ τούτων αὐτῶν. Inadequate as are the data of experience, we start with them and use them as stepping-stones to higher knowledge.

a 13. πάλιν. The characteristic of the reasoning which follows is, as Simplicius points out, that it argues from effects to causes, and revises the definition by investigating the different types of soul with which experience has made us familiar. Of these there was no mention in II., c. 1, 412 a 6—b 9. **τὸ ὅτι.** The fact that *B* is *C* as opposed to τὸ διότι, the reason why it is so, the cause or condition upon which the fact depends. These convenient abbreviations A. explains by πρᾶγμα in the one case and αἰτία in the other.

a 14. τὸν ὁριστικὸν λόγον, "the statement in which a definition is set forth," not materially different from ὅρος or ὁρισμός: cf. *Anal. Post.* II. 10, 93 b 29 sqq. Besides verbal definitions, which serve merely to explain the meaning of a name, A. recognises two classes of real definitions, clearing up the nature or what (τί ἐστι) of the thing defined. In the first the object is to set forth (δηλοῦν, δεικνύναι) what the thing really is, its essence, not its accidental qualities; such are Euclid's definitions, each of them is ἀναπόδεικτος, σημαίνει μέν, δείκνυσι δ' οὔ. The second class, besides such a statement, also contains a reference to the cause or essential condition. Cf. *Anal. Post.* II. 10, 93 b 38—94 a 13, where the example chosen is thunder (βροντή), of which the definition ψόφος ἐν νέφεσιν belongs to the first class, and the definition ψόφος ἀποσβεννυμένου πυρὸς ἐν νέφεσιν to the second class. Similarly στέρησις φωτὸς defines an eclipse, but the complete definition would add the cause, viz. the interposition, ὑπὸ γῆς ἐν μέσῳ γιγνομένης, *Metaph.* 1044 b 14 sq. Thus, according to A., τι κατά τινος σημαίνει ὁ λόγος ὁ ὁριστικός, καὶ δεῖ τὸ μὲν ὥσπερ ὕλην εἶναι, τὸ δὲ ὡς μορφήν, *Metaph.* 1043 b 30—32.

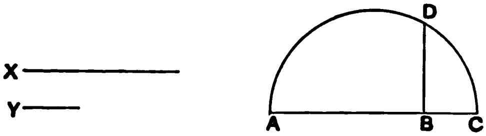
a 16. συμπεράσμαθ', "conclusions of syllogisms," συμπεραίνειν, like "rationem concludere," meaning to draw an inference from premisses and so round off or finish the argumentation: cf. 407 a 27. Each fresh physical discovery is ultimately embodied in a definition, e.g. gravitation.

a 17. ὁ τετραγωνισμός. See Wallace, p. 230. To understand the illustration we must refer to Euclid II. 14 and VI. 13. Euclid in II. 14 proposes to describe a square that shall be equal to a given rectilinear figure (*A*), and after constructing the rectangle *BCDE* which is equal to *A*, finds that if we produce *BE* to *F* and make *EF*=*ED*, bisect *BF* at *G* and produce *DE* to a point *H* on the circumference of a circle drawn from *G* with radius *GB*, the square of *EH* is equal to *BCDE*, and so to *A*.



The problem in VI. 13 is to find a mean proportional between two straight lines; and we find that by placing the two lines in one straight line *AC*, describing a semicircle on the whole line as diameter, and from the point *B* where the two lines meet drawing a line at right angles to *D* a point on the circum-

ference, a mean proportional, i.e. a line which stands to the one line in the same ratio as it itself stands to the other, is obtained; so that $AB : BD :: BD : BC$.



It will be observed that BD, which is the mean proportional between AB and BC, is also the side of the square equal to the rectangle $AB . BC$. Cf. *Metaph.* 996 b 18 *ἔτι δὲ καὶ ἐν τοῖς ἄλλοις τὸ εἰδέναι ἕκαστον, καὶ ὧν ἀποδείξεις εἰσί, τότ' οἰόμεθα ὑπάρχειν, ὅταν εἰδῶμεν τί ἐστιν, οἷον τί ἐστι τὸ τετραγωνίζειν, ὅτι μέσης εὕρεσις.*

413 a 20—b 13. Life, in some one of its manifestations, distinguishes that which has soul from that which is inanimate [§ 2]. The lowest form of life is best seen in plants, which have no other form. It implies nutrition and growth, and may be termed the nutritive principle [§ 3]. It is found by itself in plants, but is implied wherever, in mortal things, there are higher forms of life. Next comes sensation, the distinguishing characteristic of all animals, some of which are as stationary as plants [§ 4]. Of the various senses, touch alone is common to all animals, and, though found separate in some animals, is implied whenever other senses are present, just as the nutritive principle, which exists separately in plants, is conjoined with all higher forms of life [§ 5]. To these two functions, nutrition and sensation, may be added motion and understanding (*διάνοια*) [§ 6].

a 21. τῷ ζῆν. Cf. 412 a 13 *τῶν δὲ φυσικῶν τὰ μὲν ἔχει ζωήν, τὰ δ' οὐκ ἔχει· ζωὴν δὲ λέγομεν τὴν δι' αὑτοῦ τροφήν τε καὶ αὔξησιν καὶ φθίσιν.*

a 22. πλεοναχῶς δέ. We notice that the various meanings which the term 'life' bears have reference to the common characteristic by which that term was defined in II., c. 1 (see preceding *note*), and this is admitted here in the words *κἂν ἕν τι τούτων ἐνυπάρχῃ μόνον,* as soon as the relation between the terms of this series of functions is properly understood. At the same time, it is A.'s great merit as a psychologist to have enlarged the conception of vitality and vital principle and to have brought these different functions into connexion for comparative study. Cf. *Eth. Nic.* 1170 a 16—20 *τὸ δὲ ζῆν ὁρίζονται τοῖς ζῴοις δυνάμει αἰσθήσεως, ἀνθρώποις δ' αἰσθήσεως ἢ νοήσεως· ἡ δὲ δύναμις εἰς τὴν ἐνέργειαν ἀνάγεται, τὸ δὲ κύριον ἐν τῇ ἐνεργείᾳ· ἔοικε δὴ τὸ ζῆν εἶναι κυρίως τὸ αἰσθάνεσθαι ἢ νοεῖν. τὸ δὲ ζῆν τῶν καθ' αὑτὸ ἀγαθῶν καὶ ἡδέων,* and 1149 a 9 *καὶ τῶν ἀφρόνων οἱ μὲν ἐκ φύσεως ἀλόγιστοι καὶ μόνον τῇ αἰσθήσει ζῶντες θηριώδεις, ὥσπερ ἔνια γένη τῶν πόρρω βαρβάρων.* **ἕν τι.** That is, life in a single one of these significations, namely the principle of nutrition and growth; not one or other, which would be *ἕν γέ τι.* When A. says *ἕν τι,* he is anticipating, e.g., 413 b 33.

a 23 οἷον νοῦς, αἴσθησις...24 ἔτι...25 αὔξησις. It is confusing to have *ἕν τι τούτων* replaced by a list of four or five powers, when *ζῆν* is employed in but one particular sense, viz. the last. It is best, then, to take the words, though grammatically nominatives to *ἐνυπάρχῃ,* as simply an interpretation of *πλεοναχῶς δὲ τοῦ ζῆν λεγομένου,* for the *ἕν τι* represents nothing but nutrition and growth, since (a 31 sq.) nutrition goes with all the other vital functions and none of them can be singly present without it. Later on (414 a 4, 12) A. is more careful to distinguish life in this restricted sense from sensation and thought.

a 25. διὸ καὶ τὰ φυόμενα. That a plant lives and "has a soul" is consistently maintained by A.; cf. *De Gen. An.* II. 3, 736 b 13 and especially *De Part. An.* IV. 5, 681 a 12 *ἡ γὰρ φύσις μεταβαίνει συνεχῶς ἀπὸ τῶν ἀψύχων εἰς τὰ ζῷα διὰ τῶν ζώντων μὲν οὐκ ὄντων δὲ ζῴων* (i.e. plants).

a 26. δύναμιν καὶ ἀρχήν. Cf. 412 a 14. What is there called *τὴν δι' αὑτοῦ τροφήν τε καὶ αὔξησιν καὶ φθίσιν*, A. here calls a capacity or origin of growth and decay. With *ἀρχὴ* in the sense of originating cause cf. 402 a 6, 412 b 17, 415 b 8 sqq., *αἰτία καὶ ἀρχή*.

a 28. κατὰ τοὺς ἐναντίους τόπους, "in opposite directions," *in contrarias partes.* This incidental addition serves to introduce the parenthetical note of the following sentence.

a 29 πάντῃ, ὅσα...30 τέλους. The text is uncertain. *πάντοσε*, ut Bekkerus restituit, nec vero *πάντῃ ὅσα*: neque enim scriptor plantis relictis ad cetera animantia vagatur (Trend.). But *πάντοσε* is found in only one inferior manuscript and *Ind. Ar.* cites no other instance of the word in A. But, if we waive the objection to *πάντοσε*, Bekker should at least have placed a stop after the word; his text as it stands requires us to take *καὶ τρέφεται καὶ ζῇ* with *ἐπ' ἄμφω καὶ πάντοσε*, which strains the meaning of *τρέφεται* and makes it very little different from *αὔξεται*. Torst., who saw this and placed a colon after *πάντοσε*, insisted on the retention of *τε*: non potest omitti. A. hoc dicit: nutritur et propterea quod nutritur vivit. Biehl, however, who restores *ὅσα* from E, places the stop after *τρέφεται* and is thus compelled to omit *τε*. As none of these proposals is very convincing, I am content to reproduce the text of E, placing a comma after *πάντῃ*. It gives a clear sense, *ὅσα* being of course restricted to plants, pace Trendelenburgii, and the tautology of *ἀεὶ...διὰ τέλους, τρέφεται...ἕως ἂν δύνηται λαμβάνειν τροφὴν* cannot be altogether removed by any change. I cannot see that Biehl's text is any improvement upon the reading of cod. W, which also omits *τε*, provided we punctuate after *τρέφεται* thus: *ὅσα ἀεὶ τρέφεται, καὶ ζῇ κτέ.* The cardinal point to bear in mind is that, according to A., growth depends upon nutrition, and nutrition implies life (415 b 26—28, 416 b 9). So, with his habitual caution, after telling us plants grow in all directions, he adds the necessary qualification "provided they are constantly nourished and therefore kept alive." It would be possible to take the last clause *ἕως ἂν κτέ.* with *ἐπ' ἄμφω καὶ πάντῃ* [int. *αὔξεται*] instead of with *ζῇ*, but that would not mend matters much. Cf. 404 a 15 *ζῆν δὲ ἕως ἂν δύνωνται τοῦτο ποιεῖν*, 416 b 14, 434 a 23 sqq., *De Part. An.* II. 10, 655 b 31 *οὔτε γὰρ εἶναι οὔτε αὐξάνεσθαι ἐνδέχεται ἄνευ τροφῆς*.

a 31. τοῦτο μὲν τῶν ἄλλων δυνατόν, τὰ δ' ἄλλα τούτου ἀδύνατον. Here the *δὲ* is concessive, clearly so because *φανερὸν* is related only to the clause with *μέν*, the possibility of separation. Ordinarily it is the *μὲν* clause which is concessive.

a 32. ἐν τοῖς θνητοῖς, "in living things which are perishable, as being subject to death, and so to generation and destruction." This is the proper sphere of physics and therefore of this treatise. Outside this sphere A. recognised (1) *οὐσίαι αἰσθηταὶ ἀΐδιοι, τὰ ἀΐδια τῶν αἰσθητῶν* and (2) *οὐσία ἀκίνητος*. The former include the heavenly bodies, sun and stars, the latter is the deity. See for the divisions *Metaph.* 1069 a 30—33, 1071 b 3—5; for a possible reference to the eternal things of sense, *De A.* 434 b 4 sq. They are undoubtedly referred to *Metaph.* 991 a 10, 1050 b 16—29, 1069 b 25.

413 b 1. τοῖς ζῶσι, i.e. in plants which live no less than animals. For *τοῖς ζῶσι*, not *τοῖς ζῴοις*, cf. 413 b 4 *ζῷα λέγομεν καὶ οὐ ζῆν μόνον* and *De Part. An.* IV. 5, 681 a 13 *τῶν ζώντων μὲν οὐκ ὄντων δὲ ζῴων*.

b 2. διὰ τὴν αἴσθησιν: cf. *De Gen. An.* II. 2, 736 a 29 *περὶ ψυχῆς καθ' ἣν λέγεται ζῷον (ζῷον δ' ἐστὶ κατὰ τὸ μόριον τῆς ψυχῆς τὸ αἰσθητικόν).* **πρώτως**, "primarily," or "fundamentally"; the adverb used in the same sense as the adjective in the definition of soul as *ἐντελέχεια ἡ πρώτη σώματος* (412 a 27). **τὰ μὴ κινούμενα.** See *note* on 410 b 19 **μόνιμα.**

b 4. **αἰσθήσεως** is the whole, of which *ἁφή* is a part.

b 5. **ἁφή.** This is repeated below, 414 b 3. Cf. 434 b 9—11, 13, 23 sq., 435 a 12 sq., 435 b 5—7, 16 sq., *De Sensu* 1, 436 b 13, *Hist. An.* I. 3, 489 a 17 *πᾶσι δὲ τοῖς ζῴοις αἴσθησις μία ὑπάρχει κοινὴ μόνη ἡ ἁφή.*

b 6. **οὕτως.** Another fact which confirms the ascending scale of psychical functions. Plants grow and live without sensation. The lowest animals, or zoophytes, have one sense only, namely touch.

b 7. **μόριον.** This word is used prematurely and carelessly, for below (b 13—16) the question whether there be parts of the soul is expressly reserved: cf. 413 a 5 *εἰ μεριστὴ πέφυκεν.* In fact the whole sentence is of the nature of a footnote explaining the technical term *τὸ θρεπτικόν* as the nutritive "part" or principle of soul, elsewhere often called *τὸ φυτικὸν καὶ αὐξητικόν.*

b 10. **ὕστερον ἐροῦμεν.** The reason, which is teleological, will be found in III., c. 12, especially 434 b 10 sqq. The sense of touch is necessary if the animal is to maintain itself, for body is in every case tangible, and the animal, as *σῶμα ἔμψυχον*, comes in contact with other bodies, and if it had not the sense of touch, it would not be able to avoid some of these corporeal things and take others. See also the comparison between the means of defence possessed by man and the brutes and the superior utility of the human hand, *De Part. An.* IV. 10, 687 a 5 sqq.

b 11. **ἐπὶ τοσοῦτον εἰρήσθω**, "let this much suffice." We here repeat the substance of 413 a 20—b 10. **τῶν εἰρημένων τούτων**, "the functions here mentioned."

b 12. **τούτοις ὥρισται κτλ.** Note the omission of "appetency," *ὀρεκτικόν*, and the vagueness of "understanding," *διανοητικόν*. A. speaks in detail of all the functions which discriminate the animate from the inanimate. He will take the several senses, give some speculation as to the way in which each operates and some remarks on the central sense in which all converge. Note how completely this accords with the scheme outlined in Book I., c. 1, especially 402 a 7 sqq., b 1 sqq., b 9 sqq., and b 21 sqq.

b 12. **θρεπτικῷ, αἰσθητικῷ, διανοητικῷ, κινήσει.** Two of these four, motion and sensation, were recognised by all A.'s predecessors; see 403 b 24—31. He adds two others, nutrition and understanding. His first business in this treatise is to enlarge the limited view of psychology taken by his predecessors.

413 b 13—414 a 3. It may be asked whether each of these four faculties is a soul or a part of soul, and whether, if a part, it can exist separately, or is only separable in thought. With respect to some of these faculties the question is easy to settle [§ 7]. Not only can plants live when divided, but certain worms continue to feel after being cut in pieces. Sensation in the severed parts implies pleasure or pain. These in turn imply appetite and so desire of a sort. Whence it is easy to infer the union of these several faculties in the soul of each segment [§ 8]. If any part or faculty of soul is separable, it can only be the intellect: the question will come up again hereafter [§ 9]. While we deny that the other faculties can have separate existence, we at the same time fully maintain that each of them is logically distinct and separable in thought, the power of opining being as distinct from sensitivity as opinion is from sensation [§ 10]. Some animals possess but one of such faculties, some

more, and others all of them, just as within the sphere of sense-perception some animals have but one sense, others more than one, others all the senses [§ 11].

b 13 πότερον...15 τόπῳ. This resumes the old problem of 402 b 1 *σκεπτέον δὲ καὶ εἰ μεριστὴ ἢ ἀμερής*, cf. 411 a 26—b 3. It should be observed that only material things can be spatially separate, except of course *κατὰ συμβεβηκός*: cf. 406 a 4—16, 407 a 2, 7—9. What is here expressed by *τόπῳ* might be expressed by *κατὰ μέγεθος*, cf. 429 a 11 *εἴτε καὶ μὴ χωριστοῦ κατὰ μέγεθος ἀλλὰ κατὰ λόγον*: also 433 b 25 *μεγέθει δ' ἀχώριστα*, 432 a 20 *χωριστὸν ἢ μεγέθει ἢ λόγῳ*.

b 16 ἐπὶ τῶν φυτῶν...19 πλειόνων, "in the case of plants, some," i.e. such as are propagated by cutting. After the division the parent plant and cutting continue to live separated from one another. We should expect *ἔνια* to mean "some plants," but *ἀπ' ἀλλήλων* shows that it means "some parts of plants." The judicious Themistius omits *ἔνια* from his paraphrase. The use of *διαιρούμενα* shows that, when the sentence began, A. was thinking of the undivided plants, but from *χωριζόμενα ἀπ' ἀλλήλων* it is equally clear that the subject of the sentence has changed and has become "the slips" or parts of the now divided plants. See *notes* on 411 b 19, 25—27.

b 19. ἑτέρας διαφοράς, "other characteristics," viz. the differences which determine the varieties of soul, the sensitive, locomotive, nutritive. As these are not strictly species of a genus, the word must not be taken in the strict technical sense of differentiae.

b 20. ἐν τοῖς διατεμνομένοις, in the resulting segments: that is, divide these "insects" (see *note* on 411 b 20 *ἔνια τῶν ἐντόμων*) and the portions are able to go on performing certain vital functions. Such creatures as earthworms have vitality in compartments, as well as in the whole.

b 22. εἰ δ' αἴσθησιν, καὶ φαντασίαν καὶ ὄρεξιν. If we leave the comma after *αἴσθησιν*, imagination in the technical sense (see on 403 a 8) would be attributed to all animals which possess sensation. It appears, however, from 415 a 10 sq. *τοῖς μὲν οὐδὲ φαντασία* that not all animals have *φαντασία*. Freudenthal would therefore bracket *καὶ φαντασίαν*. Professor H. Jackson proposes to secure the same end by a change of punctuation, removing the comma after *αἴσθησιν* and placing it after *φαντασίαν*. This gets rid of inconsistency for the present, but, as we shall see, A. is not at all clear whether all the lower animals have something analogous to imagination in man, or what such a faculty is like in the lowest forms of life. See on 428 a 10 sq., 429 a 4—8, 433 b 31—434 a 5, 433 a 9—12.

b 25. οὐδέν πω. We are in fact no nearer a decision of the problem raised in 403 a 3—16. In 408 b 18—29 A. gave unmistakable hints that *νοῦς* is to be regarded as a separate entity, which is the view actually expounded of the one part of *νοῦς* in III., cc. 4—8 (q.v.). In the present passage we have again a mere saving clause or guarded statement which does not commit us. Cf. 413 a 8 *ἔτι δὲ ἄδηλον εἰ κτέ.* and *note*.

b 25. ἀλλ' ἔοικε ψυχῆς γένος ἕτερον εἶναι. Most editors take *ψυχῆς* as partitive genitive, e.g. Wallace translates: "Reason however would seem to constitute a different phase of soul from those we have already noticed." It would be grammatically possible to join *ψυχῆς* with *ἕτερον*, "it would seem, however, that intellect is something different from soul." If *νοῦς* and *ψυχή* were *ἕτερα τῷ γένει*, the former might be described as *ἕτερον γένος*. We should thus avoid making *νοῦς* a kind of *ψυχή*. But, considering the numerous passages in which *νοῦς* and *νοεῖν* are treated as functions of soul and the use of *ἡ νοητική* [int. *ψυχή*] 429 a 28, I shrink from this expedient, even though it might remove some superficial difficulties. The fact is that, as pointed out by Zeller and others, the

position of νοῦς in the system is anomalous. What is here said of νοῦς agrees exactly with the substance of 408 b 18—29, of which passage it is a neat summary.

b 28. **καθάπερ τινές φασιν.** The Platonic view is intended. Cf. *notes* on 411 b 5. In the *Timaeus* 69 D sqq. not only does Plato divide the soul, but he actually assigns the different parts to different parts of the body.

b 29. **τῷ δὲ λόγῳ ὅτι ἕτερα, φανερόν.** This was the alternative to spatial or local distinctness set forth in 413 b 14 ὥστ' εἶναι χωριστὸν λόγῳ μόνον ἢ καὶ τόπῳ, where see *note*. For the local distinctness which A. ascribes to Plato's three souls he substitutes a logical distinction between the several faculties. **αἰσθητικῷ γὰρ εἶναι,** "sensitivity in the abstract." Cf. *supra* 412 b 13 τὸ πελέκει εἶναι. The absence of the article is rare. Cf. 416 b 12 τροφῇ καὶ αὐξητικῷ εἶναι. In 429 b 11 ὕδατι εἶναι and *Metaph.* 1001 a 12 τοῦ ἑνὶ εἶναι καὶ ὄντι the article can easily be supplied from what precedes.

b 30. **δοξαστικῷ,** int. εἶναι. This seems to be a subdivision of the thinking faculty (διανοητικόν), δοξάζειν being enumerated among psychical functions in 411 a 26 sq.

b 32. **τῶν ζῴων.** If we compare the parallel passage 414 a 29—b 1 we notice that these words are absent. To omit them here would remove an obvious inconsistency. For, if they are to be taken, not only with b 32 ἐνίοις, but also with b 33 τισὶ and ἑτέροις, A. is committed to the statement that there are animals with only one power or faculty of soul, which cannot be true in view of 414 a 32—b 1. Essen, accordingly, would read ζώντων for ζῴων. But it is quite possible that A. did use this incorrect expression, and Them. seems tacitly to correct the blunder: 46, 5 H., 84, 19 Sp. τῇ μὲν οὖν πρώτῃ διαφορᾷ τὰ ζῶα ταύτῃ διήνεγκεν, ὅτι τοῖς μὲν ἅπασαι τῆς ψυχῆς ὑπάρχουσιν αἱ εἰρημέναι δυνάμεις, τοῖς δὲ πλείους, τοῖς δὲ ἐλάττους, τοῖς δὲ καὶ μία μόνη, ἅπερ οὐ **ζῷά φαμεν, ἀλλὰ ζῶντα.**

b 33. **ποιήσει.** M. Rodier reads ποιεῖ, a fact which ought to have been recorded in the critical *notes*.

414 a 1. **διαφορὰν τῶν ζῴων.** The gradations of soul will serve as a basis for a classification of animals. The inferior manuscript P reads τῶν ζώντων here. M. Rodier, who meets the difficulty mentioned in *note* on b 32 *supra* by restricting b 32 ταῦτα, b 33 τούτων, quite arbitrarily, to the faculties of soul which animals possess other than the nutritive, understands b 33 ἓν μόνον, τοῦτο to be τὸ αἰσθητικὸν and so gives a different interpretation of the clause, viz. that sensation differentiates the animal from the plant: "qui différencie l'animal, c'est-à-dire qui constitue la différence spécifique de l'animal par rapport au vivant." **ὕστερον,** viz. III., cc. 12 and 13. The teleological explanation there sketched in outline is given with greater fulness of detail in the treatise *De Part. An.*, cf. IV. 10, 687 a 2 δι' ἣν μὲν οὖν αἰτίαν τὰ μὲν δίποδα τὰ δὲ πολύποδα τὰ δ' ἄποδα τῶν ζῴων ἐστί, καὶ διὰ τίν' αἰτίαν τὰ μὲν φυτὰ τὰ δὲ ζῷα γέγονεν, εἴρηται.

a 3. **τὰ δὲ τινάς,** e.g. bees, which, according to A., have no sense of hearing cf. *Metaph.* 980 b 22 φρόνιμα μὲν ἄνευ τοῦ μανθάνειν, ὅσα μὴ δύναται τῶν ψόφων ἀκούειν, οἷον μέλιττα.

414 a 4—19. The starting point of the present enquiry, 413 a 20 sqq., is that the animate is differentiated from the inanimate by living. Hence soul stands for that by which we live and perform the various vital functions, e.g. have sensation. But A. proceeds: such a phrase as "that by which we live and have sensation" bears two meanings, as we see from the similar phrases, "that by which we know" and "that by which we are healthy,"

which may denote either (1) the form, knowledge or health, or (2) that which is receptive of form, in the one case "the soul" regarded as capable of knowledge, in the other, viz. the case of health, some part of the body or even the whole by which we are healthy. Now it is as form and not as recipient or substratum that soul is said to be "that whereby we live, perceive and think" [§ 12]. Hence soul is the form and therefore the entelechy of a species of body [viz. a natural body provided with organs], not body the entelechy of soul [§ 13].

a 4 ἐπεὶ δὲ...14 ὑποκείμενον. The best view as to the construction of this sentence is that of Bonitz, *Arist. Stud.*, II. 120 sqq. According to him, ἐπεὶ introduces the first of three premisses, constituting the protasis; the apodosis begins at a 13 ὥστε λόγος. Some have made the apodosis begin at a 12 ἡ ψυχὴ δέ, but the clause beginning with these words is wanted as one of the premisses of the argument. "The first premiss gives expression to a fact of linguistic usage, the fact, viz. that under ᾧ ἐπιστάμεθα we can understand at once ἐπιστήμη and ψυχή, just as under ᾧ ὑγιαίνομεν we can understand ὑγίεια or σῶμα. The second brings out the import of this use of language by showing that the first of the two meanings denotes the form and notion, the second the receptive subject or substratum. The third premiss finally maintains that the soul is that through which we live and think πρώτως, in the truest and most proper sense of the terms, and the conclusion therefore follows that soul is the λόγος and εἶδος, rather than the ὕλη or ὑποκείμενον" (Bonitz, *Arist. Stud.* II. 121). Other and less satisfactory modes of dealing with the sentence may briefly be noticed: (1) Trend. would alter ἐπεὶ δὲ into ἔτι δὲ quite unnecessarily, as Bonitz shows; (2) Torstrik would make the apodosis begin with a 12 ἡ ψυχὴ δὲ τοῦτο ᾧ ζῶμεν καὶ αἰσθανόμεθα καὶ διανοούμεθα πρώτως; (3) Pacius finds the apodosis in a 8 τούτων δ' ἡ μὲν ἐπιστήμη κτέ.

a 5 καθάπερ ᾧ ἐπιστάμεθα (λέγομεν δὲ τὸ μὲν...6 ψυχήν). If we omit the δὲ with Bonitz and Biehl, there will be no comma before λέγομεν, which will then be constructed with καθάπερ, "just as by the phrase ᾧ ἐπιστάμεθα we mean" etc If we retain δὲ the καθάπερ will be retrospective, the comma after ἐπιστάμεθα will be required, and λέγομεν δὲ will introduce an explanatory sentence "now we mean by it" etc.

a 7. ᾧ ὑγιαίνομεν. Prof. Bywater remarks in *Journ. of Phil.*, vol. XVII. p. 55, "I think we might with advantage bracket the ᾧ before ὑγιαίνομεν; with the ᾧ the clause as a whole ought surely to have run thus: ὁμοίως δὲ καὶ ᾧ ὑγιαίνομεν τὸ μὲν ὑγίεια [or ὑγίειαν] τὸ δὲ μόριόν τι τοῦ σώματος ἢ καὶ ὅλον." This is undoubtedly the case, but I take the ungrammatical datives ὑγιείᾳ...μορίῳ...ὅλῳ to be genuine, assimilated by inadvertence to the preceding ᾧ and ἑκατέρῳ: this opinion is strengthened rather than weakened by the fact that in some inferior MSS. (X and pr. S) the alteration to ὑγίειαν is found, doubtless on the scribe's conjecture. **τὸ μὲν ὑγιείᾳ**, int. λέγεται or φαμὲν ὑγιαίνειν, if it is worth while to preserve grammatical accuracy where the writer is notoriously careless.

a 8. τούτων δ' ἡ μὲν ἐπιστήμη. Here begins the second premiss of the three marked by Bonitz. Τούτων, i.e. of these meanings or implications of the phrases ᾧ ἐπιστάμεθα and ᾧ ὑγιαίνομεν.

a 9. μορφή καὶ εἶδός τι. Cf. 412 a 8, *note*. **καὶ λόγος.** Cf. 412 b 16 (also 403 b 2). **οἷον ἐνέργεια,** "active operation." This, properly speaking, differs somewhat from actuality (ἐντελέχεια). When opposed to ἐνέργεια, δύναμις denotes capacity of action, ἐνέργεια being actual operation. Opposed to ἐντελέχεια, δύναμις denotes a capacity of existence or development, the power of becoming something, ἐντελέχεια being actual existence or realisation. To return to the instance given in 412 a 22—28, τὸ θεωρεῖν is, more properly, active operation, the exercise of knowledge, while ἐπιστήμη is knowledge which may be in abey-

ance, implicit actuality. But the proof of this actuality of existence is to be found in active operation. The proof that a fleet is in being is that it is doing its work. Hence ἐνέργεια will often do as well as ἐντελέχεια and is constantly so used in the *Metaphysics*. One reason why ἐντελέχεια is preferred in *De A.* probably is, that soul is made analogous to the first or implicit stage of actuality, to ἐπιστήμη and not to θεωρεῖν, comatose body being itself alive and therefore endowed with soul, even though not actively operant. At this point (II., cc. 1, 2) A. is not concerned whether soul is a distinct entity or a mere operation of the living body. He has framed a definition wide enough to include all operations of the animate being, whichever of these two alternatives he ultimately adopts. For this purpose as a rule he prefers the term ἐντελέχεια; thus in 412 a 22—24, where sleep is contrasted with waking, and knowledge in abeyance with the application of knowledge, soul is put on a level with sleep and knowledge in abeyance, because life begins with its implicit presence: it need not at once be explicit. Sleep is analogous to ἔχειν καὶ μὴ ἐνεργεῖν, that is ψυχὴ exists before ἐνέργεια comes in. Here however, in opposition to the mere δύναμις of ὕλη, soul in sleep may be regarded as a sort of energy or activity.

a 10. τοῦ δεκτικοῦ, the recipient, the subject of which attributes are predicated = τὸ ὑποκείμενον. **ὑγιαστικοῦ.** There seems no reason to change this to ὑγιαστοῦ; see critical *notes*. From *Phys.* VIII. 5, 257 a 14—19 it is clear that ὑγιαστικὸν stands to ὑγιαστὸν as κινητικὸν to κινητόν, and it might be thought that, though the recipient is regarded as active in respect of knowledge, yet in respect of health he is regarded as passive. But just as ὑγιεινὸν is explained to be not merely that which produces or preserves or marks health, but also that which is the recipient of health (*Metaph.* 1003 a 34 ἀλλ' ὥσπερ καὶ τὸ ὑγιεινὸν ἅπαν πρὸς ὑγίειαν, τὸ μὲν τῷ φυλάττειν, τὸ δὲ τῷ ποιεῖν, τὸ δὲ τῷ σημεῖον εἶναι τῆς ὑγιείας, τὸ δ' ὅτι δεκτικὸν αὐτῆς), so also with τὸ ὑγιαστικόν. That Philop. and Simpl. should vary the term in paraphrasing is what we might expect.

a 11 δοκεῖ...12 ἐνέργεια. A general principle fully endorsed by A. See 426 a 2—11 with *notes*. The word **διατιθεμένῳ** implies a temporary condition or disposition, as does διάθεσις generally. As πάσχοντι and διατιθεμένῳ are joined here, so πάθος is joined with διάθεσις in *Phys.* II. 1, 193 a 25 τὰ δὲ ἄλλα πάντα πάθη τούτων καὶ ἕξεις καὶ διαθέσεις.

a 12. ἡ ψυχὴ δὲ. This is the third premiss noted by Bonitz.

a 13. πρώτως. As Bonitz points out, this means "in the primary and principal sense"; the adverb is often joined with κυρίως, and ἁπλῶς and καθ' αὑτὸ are equivalent expressions. Each thing is said to be what it really is (ὅπερ ἕκαστόν τι) in virtue primarily of its form, and only secondarily in virtue of its matter. The force of πρώτως is to bring out the fundamental position of the soul in life. We live and perceive by the body, but we cannot be said to do so πρώτως. Cf. *Metaph.* 1022 a 31 καὶ ζῇ ὁ ἄνθρωπος καθ' αὑτόν· ἡ γὰρ ψυχὴ μέρος τι τοῦ ἀνθρώπου, ἐν ᾗ **πρώτῃ** τὸ ζῆν. See also *note* on 403 b 29. **ὥστε λόγος** introduces the apodosis. Disengaging the argument from its complications, we may briefly state it thus: It is primarily in virtue of its form that a given thing is said to have such and such a property. Now it is primarily in virtue of soul that a thing is said to have life. Therefore soul is the form of the living being, the ἔμψυχόν τι.

a 15. καθάπερ εἴπομεν, viz. 412 a 6—11.

a 17. ἐπεὶ τὸ ἐξ ἀμφοῖν. This is a most important link in the argument, and its insertion here tends to clear up the obscurities of the parallel passage in 412 a 16—22, where see *notes*. The reasoning here is as follows: Composite substance consists invariably of form and matter. The animate being (τὸ

ἔμψυχον) is such a composite substance consisting of form and matter. Since therefore in this case the composite substance is animate or endowed with soul [and it has been proved that soul is form, 414 a 13 *ὥστε λόγος κτέ.*], it follows that soul is the form of body, not body the form of soul, and, we may add, the form or entelechy of a certain sort of body (*σώματός τινος*), namely (as we learnt in II., c. 1) a natural body provided with organs.

414 a 19—28. This definition agrees with the views of those who, while distinguishing soul from what is corporeal, make it to depend on body. Not only so, but it is dependent on a body of a definite kind, and our predecessors were wrong in supposing that any and every sort of body could be tenanted by any and every soul [§ 14]. This result is just what we should expect: as every entelechy has its appropriate matter, so, too, has soul, being as it is the entelechy of a body so constituted as to be capable of being tenanted by soul [§ 15].

As here soul is not a body, though at the same time it is something belonging to and dependent upon a body, so in *De Sensu* 6, 446 b 25 sq. the objects of the telepathic senses, colours, odours and sounds, are declared to be not bodies, though at the same time not independent of bodies. The special sensibles are qualities; and in some cases they are *κινήσεις*, varieties of motion: *ἔστι δ' οὔτε σώματα ταῦτα, ἀλλὰ πάθος καὶ κίνησίς τις (οὐ γὰρ ἂν τοῦτο συνέβαινεν), οὐδ' ἄνευ σώματος.*

a 19. οἷς δοκεῖ. The reference is not clear. Bonitz suggests that, whoever else are intended, the words exactly suit the view of soul as a harmony maintained by Simmias in Plato, *Phaedo*, 85 E sqq.; the harmony is not the lyre, but is something invisible and incorporeal dependent upon it, and ceases to exist when the strings are broken.

a 21. σώματος δέ τι. The genitive expresses relation in the most general way. Compare its use in Plato, *Rep.* 438 A *ἀλλὰ μέντοι, ἦν δ' ἐγώ, ὅσα γ' ἐστὶ τοιαῦτα οἷα εἶναί του, τὰ μὲν ποιὰ ἄττα ποιοῦ τινός ἐστιν, ὡς ἐμοὶ δοκεῖ, τὰ δ' αὐτὰ ἕκαστα αὐτοῦ ἑκάστου μόνον.* It is not easy to find an English equivalent which will express this suitably. "Function" in the mathematical sense might serve, but from its biological associations has become unsuitable. To A. the relation is not one of subordination, but of coordinate reciprocity.

a 22. τοιούτῳ. This adjective = "of a suitable kind," and anticipates the more explicit description at the close of the chapter (*τοῦ δύναμιν ἔχοντος εἶναι τοιούτου*, 414 a 28). **καὶ οὐχ ὥσπερ.** The literal rendering "contrary to the view of our predecessors" etc. is so clumsy that it is convenient to substitute "whereas" or the like. **οἱ πρότερον**, the Pythagoreans more especially. See 407 b 13—26.

a 23. τίνι καὶ ποίῳ. See 407 b 13—19, where the same objection is urged.

a 24. τοῦ τυχόντος. See *note* on 407 b 19.

a 25. οὕτω δὲ γίνεται. I take *γίνεται* as almost equivalent to *συμβαίνει*. "The thing happens in this way," i.e. the soul is found in a body of a definite kind, *ὑπάρχει ἐν σώματι τοιούτῳ*. Them. replaces *οὕτω* by *νῦν δέ*, "in point of fact." **καί**, "in fact," emphasising the following words, as in 412 a 16 *καὶ σῶμα τοιόνδε*. **κατὰ λόγον**, "as we might expect." In this sense contrasted with *παρὰ λόγον* or, as in Thuc. III. 39. § 4, *παρὰ δόξαν*, = contrary to expectation. So Bonitz *ad Metaph.* 989 a 30: Ubi *κατὰ λόγον* usurpatur, nomine *λόγος* nec per adiectivum nec per pronomen definito, perinde atque *εὐλόγως* id significat, quod rationibus ad rem pertinentibus accommodatum est et consentaneum. Here "as we might expect from analogy," and this gives a good meaning to *γάρ*, for soul in body of a certain kind is only a particular application of the general law or tendency (*πέφυκεν*) that the entelechy of each thing is manifested in an appropriate

matter, in that which has the potentiality of becoming such a thing. Bonitz cites for *κατὰ λόγον* in the sense of *εὐλόγως Metaph.* 1088 a 4 (cf. a 6), *Phys.* III. 7, 207 a 33, *De Resp.* 12, 476 b 14, while in *De Part. An.* III. 4, 666 a 18 sq. he notes that it is opposed to *κατ' αἴσθησιν*. See also *Pol.* 1257 a 31. Some, e.g. Philop., suppose that here there is that antithesis between *τὰ γιγνόμενα*, facts, and *οἱ λόγοι*, theories, which is frequently found in A. Accordingly, taking *καὶ* = "and," Philop. (248, 1) paraphrases *ὡς δὲ ἡμεῖς εἴπομεν...καὶ τὰ φαινόμενα οὕτως ἔχοντα μαρτυρεῖ καὶ ὁ λόγος*. But this strains the words unnaturally, and no such antithesis seems to be intended. We are concerned with *ἡ τοῦ λόγου ἐνάργεια* (418 b 24), not directly with *τὰ φαινόμενα*. *Γίνεται* does not, any more than a 23 *ἐνήρμοζον*, express a fact of experience, but a conclusion reached by the whole train of reasoning from 414 a 4. The question is, not whether facts support the theory or the theory the facts, but whether one theory is in accordance with another.

a 25. ἑκάστου. Them. interprets as follows (46, 37 H., 86, 5 Sp.) *νῦν δὲ γίνεται κατὰ λόγον· οὐ γὰρ πᾶσα ψυχὴ παντὸς σώματος εἶδός ἐστιν, ἀλλὰ τοῦ πρὸς αὐτὴν ὀργανικῶς κατεσκευασμένου καὶ ἔχοντος πρὸς τὰς ὑπαρχούσας τῇ ψυχῇ δυνάμεις ἐπιτηδείως*. He must have restricted *ἑκάστου* to animate bodies. But unquestionably the reference is wider: cf. 417 b 3 *τοῦ δυνάμει ὄντος ὑπὸ τοῦ ἐντελεχείᾳ ὄντος καὶ ὁμοίου οὕτως ὡς δύναμις ἔχει πρὸς ἐντελέχειαν*. So Philop. (248, 3) *ἡ γάρ τινος, φησίν, ἐντελέχεια ἐν ἐκείνῳ γίνεσθαι πέφυκεν, ὃ φύσει ἔχει δύναμιν τοιοῦτον εἶναι· τοιοῦτον δέ ἐστιν ἡ ἑκάστου προσεχὴς ὕλη. οὐδὲ γὰρ ἡ τυχοῦσα ὕλη τὸ τυχὸν εἶδος δέξασθαι δύναται.* So also Simpl. (105, 13) *τὸ δυνάμει ἑκασταχοῦ τοιοῦτον ὁποία ἡ ἐντελέχεια.*

a 28. τοιούτου, i.q. *ἐμψύχου*. For this logical flaw in the definition see *note* on 412 a 21. Body and soul being correlative as matter and form, neither can exist and neither can be known apart from the other. Philop. 248, 8 *ἀνάγκη ἄρα τῷ περὶ ψυχῆς λόγῳ καὶ τὸν περὶ τοῦ δεκτικοῦ σώματος συνεισάγεσθαι, ἐπεὶ καὶ τῶν πρός τι ταῦτα, ἡ ὕλη φημὶ καὶ τὸ εἶδος, τὰ δὲ πρός τι χωρὶς ἀλλήλων ἢ εἶναι ἢ γνωσθῆναι ἀδύνατον, ᾗ τοιαῦτά ἐστι.*

Chapter III.

414 a 29—b 19. The powers of the soul are variously distributed [§ 1], nutrition occurring singly in plants or together with other powers in animals. With the sentient faculty in animals goes appetency or desire. This follows from two considerations: (1) that all animals have at least the sense of touch; and (2) that sense-perception is invariably accompanied by feelings of pleasure and pain and these latter by appetite, a form of appetency or desire [§ 2]. Touch is employed upon food and implies the appetites of hunger and thirst. To these three faculties, the nutritive, the sensitive, the appetitive [§ 3], reserving imagination for a later enquiry, may be added the faculties of locomotion and understanding, found in some animals only. Understanding is confined to man and any beings superior to man, if any such exist [§ 4].

414 a 30. καθάπερ εἴπομεν. Cf. *supra* 413 a 31 sqq., b 32—414 a 1.

a 31. δυνάμεις δ' εἴπομεν, viz. 413 a 23—25, b 11—13, and it also appeared 413 b 21—24 that sensation implied appetency. On the other hand there is no separate mention of *τὸ φανταστικόν*. A.'s indifference to a complete enumeration and the provisional or tentative character of those which he gives are further illustrated 432 a 22—b 8, 433 b 1—5.

a 33. τὸ θρεπτικόν. Cf. 413 a 31—b 4. **ἑτέροις δέ**, i.e. all animals: cf. 413 a 31—b 9.

414 b 1. εἰ δὲ τὸ αἰσθητικόν, καὶ τὸ ὀρεκτικόν. The proof which follows b 1—15 holds for *ἐπιθυμία* or appetite only, the lowest form of *ὄρεξις*. Them. 47, 13 H., 86, 26 Sp. *καὶ οὐ τοῦτο λέγω, ὅτι τοῖς αἰσθανομένοις ἅπασιν ἡ ὀρεκτικὴ πᾶσα ὑπάρχει· πολλοῖς γὰρ οὔτε θυμὸς οὔτε βούλησις, ἀλλ' ἐπιθυμία μόνον.* It is tempting to equate *τὸ ὀρεκτικὸν* with the *φύσις τῆς ψυχῆς ἄλογος, μετέχουσα μέντοι πῃ λόγου* of *Eth. Nic.* 1102 b 13. Cf. *ib.* b 30 *τὸ δ' ἐπιθυμητικὸν καὶ ὅλως ὀρεκτικὸν μετέχει πως* [int. *λόγου*] *κτέ.* There is no mention of *φαντασία* until we come to 414 b 16. In 432 a 31 sqq. *τὸ φανταστικὸν* appears between *τὸ αἰσθητικὸν* and *τὸ ὀρεκτικόν*.

b 2. ὄρεξις. Though not always consistent, A. in the main adheres to the nomenclature here adopted, according to which *ὄρεξις* is a generic term for that which appears in the rational soul as *βούλησις* (wish or conation) and in the irrational soul as *θυμὸς* and *ἐπιθυμία*; cf. especially *infra* 432 b 5 sq. and see *note* on 411 a 28.

b 3. μίαν γε. Cf. 413 b 4 sq.

b 4. ᾧ δ' αἴσθησις ὑπάρχει, *v. supra* 413 b 16—24. **ἡδονή τε καὶ λύπη καὶ τὸ ἡδύ τε καὶ λυπηρόν.** By *ἡδονή τε καὶ λύπη* [int. *ὑπάρχει*] is meant that the creature can feel pleasure and pain (*ὑπάρχει τινὶ αἴσθησις καὶ ἡδονή = αἰσθάνεταί τις καὶ ἥδεται*), but this is not the sense of *τούτῳ ὑπάρχει τὸ ἡδύ τε καὶ λυπηρόν*. These words must mean that the creature has for objects what is pleasant and what is painful. The pleasure and pain reside in the percipient, the pleasurableness and painfulness in the object perceived. The mode of statement is careless. "Pleasure and pain" are feelings in the animals of whom they are predicated (*ὑπάρχει*). Sense is a discriminative faculty and accordingly the sentient animal learns to discriminate not only its own feelings (*πάθη*), but also the causes of those feelings. Simpl. 105, 19 sq. *τὰ δὲ ὡς ποιητικὰ τῶν παθῶν*, viz. the pleasurable, or pleasure-giving object, and the painful. But pleasurable and painful objects cannot strictly be attributed to the sentient animal.

b 5. τοῦ γὰρ ἡδέος ὄρεξις αὕτη: *αὕτη* means *ἐπιθυμία*, the gender of the pronoun *τοῦτο* is assimilated to that of *ὄρεξις*. If what is pleasant is the object desired when we are under the influence of *ἐπιθυμία*, its force is greatest while the pleasure is felt. Thus *ὄρεξις* would follow upon *αἴσθησις* automatically. There would be little need to interpose the link of *φαντασία*, the after result of sensation.

b 6. ἔτι δέ. A new step in the argument. The nutriment which animals require is apprehended by touch.

b 8. τούτων δ', int. *καθ' αὑτά*, as the necessary antithesis to *κατὰ συμβεβηκός*. Hot, cold, moist, dry, the qualities of body as such, are tangibles *per se*, are perceived directly by touch. Cf. 423 b 27—29. For the different meanings of sensibles *per se* and sensibles *per accidens*, see II., c. 6.

b 9. τῶν δ' ἄλλων αἰσθητῶν κατὰ συμβεβηκός, int. *αἴσθησις ἁφή*. So Alex. Aphr. ap. Philop. 253, 13 *τῶν δὲ ἄλλων αἰσθητῶν, φησὶν ὁ Ἀλέξανδρος, κατὰ συμβεβηκὸς τὴν ἁφὴν εἶπεν ἀντιληπτικὴν εἶναι* (cf. 252, 17 sqq.), Simpl. 105, 34. The objects of the other senses are indirectly perceived by touch. By this construction *τῶν δ' ἄλλων αἰσθητῶν* is made parallel to *τούτων* in the preceding line. All nutriment is tangible, but all tangibles are not nutriment. Colours, sounds and smells, though tangibles *per accidens*, contribute nothing to nutriment. A. himself lays down in so many words that one of the special senses may perceive *per accidens* the direct objects of the other senses. Cf. 425 a 30 sq. And, as he affirms that in this way we perceive what is sweet by sight (425 a 22, cf. 425 b 1—4), so no doubt he would admit that we, or other animals, *per*

accidens, perceive colour (e.g. honey), smell (sweet-scented thyme), or even sound (as of water) by touch.

The alternatives proposed are (1) that of Philop. 253, 21 sqq. who connects the genitive with b 5 sq. *ἐπιθυμία* or *ὄρεξις*, understanding it of the colours and odours of viands and beverages, which are objects of desire by association. This view, though quite unnecessary, is ingenious and at least reasonable. (2) To supply the ellipse from b 8 *τρέφεται τὰ ζῶντα πάντα* and either alter the genitive to the dative, as is done by Torstrik and by Belger and Wallace after him, or treat the sentence as anacoluthic (the dative could hardly be replaced by partitive genitive after *τρέφεται*). The latter view (2) has found most favour. Thus Simpl., who fully recognises the grammatical sense of the words, continues (105, 35) *οὐ μὴν τοῦτο λέγειν οἶμαι βούλεται, ἀλλὰ κατὰ συμβεβηκὸς τροφίμων τῶν ἄλλων ὄντων αἰσθητῶν ἡ αἴσθησις ἀντιλαμβάνεται.* Soph. 53, 7 *ἀλλὰ τρεφόμεθα μέν, ὡς εἴρηται, τοῖς κατὰ τὴν ἁφὴν αἰσθητοῖς, τοῖς δὲ ἄλλοις τῶν αἰσθητῶν...οὔ.* Soph., then, interprets "nutriment *per accidens*" by "no nutriment at all." Professor Beare (p. 178) likewise adopts (2) "The objects of other senses nourish only incidentally; just as sound, colour, smell may put an animal on the track of food, but they cannot in themselves feed it." It comes to this: if it had not been for the colour, sound and scent of the quarry, the captor would not have pursued it; if he had not pursued and caught it, he would not have eaten it; ergo, the colour, sound and scent of the quarry are constructively the nutriment of the captor. This is rather a lawyer-like way of stating the case. The plain facts are given *Eth. Nic.* 1118 a 16—23, a 9—13.

b 10 οὐθὲν γὰρ...11 ὀσμή. As I have tried to indicate by the brackets, this clause gives the reason, not for the immediately preceding statement that touch is only incidentally concerned with the other sensibles, but for that made b 7 "for touch is the sense concerned with nutriment," or rather for the first proof of this adduced b 7 *ξηροῖς γὰρ...8 πάντα*, viz. that the tangibles *per se* form animal nutriment. The first *γὰρ* clause gives a proof on the positive side that touch is concerned with food: this is now supplemented by showing that no other sense is; colours, sounds and smells being not nutriment at all, neither *per se* nor *per accidens*. Cf. 434 b 19 sq. In *De Sensu* 445 a 16 A. mentions the opinion of some Pythagoreans that certain animals feed upon odours only to reject it as irrational. The force of *γὰρ* is really obscured by those who, like Simpl., make A. first say "animals are nourished incidentally by the other sensibles" and explain this by the addition "for they are not nourished by colours, sounds and smells at all."

b 11. ὁ δὲ χυμός, flavour, the proper object of taste. A. here, by anticipation, assimilates the object of taste to the object of touch; cf. II., cc. 10, 11 generally, especially 422 a 8 and 423 a 17—20.

b 12. ξηροῦ καὶ θερμοῦ. These are the two qualities of earth, according to the scheme which A. formulates for deriving the "natural bodies" (the so-called four elements) from ultimate matter (pure potentiality) by the superposition of the primary contraries, hot, cold, dry, moist. Similarly water is determined by the conjunction of moist and cold as qualification of ultimate matter (*πρώτη ὕλη*). Cf. Zeller, *Eng. Trans.* vol. I. p. 479 sqq.

b 13. ἥδυσμά τι, a relish to the food, and not in itself food; so Them. (47, 35 H., 87, 29 Sp.). Cf. *De Sensu* 1, 435 b 22—24, 436 b 15 *τὸ γὰρ ἡδὺ διακρίνει* [int. *τὸ ζῷον*] *καὶ τὸ λυπηρὸν αὐτῇ* (int. *τῇ γεύσει*) *περὶ τὴν τροφήν, ὥστε τὸ μὲν φεύγειν τὸ δὲ διώκειν*, and 4, 442 a 8 *συμμίγνυνται δ' οἱ ἄλλοι χυμοὶ εἰς τὴν τροφὴν τὸν αὐτὸν τρόπον τῷ ἁλμυρῷ καὶ ὀξεῖ, ἀντὶ ἡδύσματος.* Probably this is what is meant by the strange phrase *ib.* 1, 436 b 17 *καὶ ὅλως ὁ χυμός ἐστι τοῦ*

θρεπτικοῦ πάθος (so Biehl), flavour is a quality of that which is nutritive. **τούτων,** i.e. of things dry, hot, moist and cold, i.e. of food solid or liquid.

b 14. **αὐτῶν,** i.e. foods and flavours. The promised discussion comes when (in cc. 10, 11) the whole subject of *τὰ γευστὰ* and *τὰ ἁπτὰ* is treated.

b 16. **φαντασίας.** Cf. 403 a 8 and *notes*: see more particularly 413 b 22. The uncertainty is not whether sense-perception implies imagination (*φαντασία*) of some sort, but whether, in all animals, this indistinct persistence of sense images really amounts to that which is defined as *φαντασία* in Book III., c. 3; at least this is what appears from 433 b 31—434 a 5. **ὕστερον.** From III., c. 3 no definite result on this point is obtained. But in III., c. 11, 433 b 31—434 a 7 A.'s remarks furnish us with an explicit statement of the problem with an indication of the lines on which he would solve it: "But we must consider the case of animals imperfectly developed, which have only the sense of touch. Is it possible that they should have imagination (*φαντασία*) or not? Or, again, appetite? For it is plain that they feel pleasure and pain. If these, then necessarily also appetite. But how can they have imagination? Or shall we say, that as such creatures move in a vague and undefined manner, so all these powers are present, but present in a vague and undefined manner? Perceptive imagination (*ἡ αἰσθητικὴ φαντασία*) is found in the other animals also, but deliberative (*βουλευτικὴ*) in those only which have reason."

b 18. **τὸ διανοητικόν τε καὶ νοῦς.** A.'s usage of the two verbs *διανοεῖσθαι, νοεῖν* as practically equivalent in meaning is abundantly illustrated throughout the treatise. When he does distinguish between them, he prefers *διανοεῖσθαι* to express the process of judging that *A* is *B* and *νοεῖν* the process of grasping a single object of thought, a notion or the content of a definition. In conformity with this distinction *διανοητικὸν* is the reasoning faculty which is discursive, which judges truth and falsehood and draws inferences, while *νοῦς* is intuitive and apprehends.

b 19. **εἴ τι τοιοῦτον ἕτερόν κτλ.** Cf. *Eth. Nic.* 1141 a 20 *ἄτοπον γὰρ εἴ τις τὴν πολιτικὴν ἢ τὴν φρόνησιν σπουδαιοτάτην οἴεται εἶναι, εἰ μὴ τὸ ἄριστον τῶν ἐν τῷ κόσμῳ ἄνθρωπός ἐστιν.* Also 1141 a 34 *καὶ γὰρ ἀνθρώπου ἄλλα πολὺ θειότερα τὴν φύσιν, οἷον φανερώτατά γε ἐξ ὧν ὁ κόσμος συνέστηκεν.*

414 b 19—415 a 13. A. now takes up a question which had been raised in 402 b 5 sq., the question, namely, in what sense the definition of soul has unity, or in what sense there is a single definition of soul. Does it correspond to the definition of animal, or is there a separate definition for each particular soul, as there is a separate definition of horse, dog, man, god, the universal animal being either non-existent or anyhow a posterior and artificial conception, like any other common term? Here he proceeds as follows: soul will have a common definition in the same way as figure. Just as there is no figure other than triangle, quadrilateral, pentagon and the rest, to which the generic definition of figure applies, so there is nothing to which the definition of soul applies, apart from the several varieties of soul. The only definition applicable to soul in general or figure in general is one which will not fit any particular soul or any particular figure, and it is absurd to look for a general notion, in these as in other cases, without investigating the infimae species [§ 5]. But just as each plane rectilinear figure is potentially contained in the next, as triangle in quadrilateral, quadrilateral in pentagon, so with the varieties of soul, the nutritive being potentially in the sensitive, the sensitive in the intellective. The right method of enquiry, then, is to ask what constitutes the soul of a plant, of a beast, of a man [§ 6]. Why such a scale exists is a further question, but its existence is a fact, as is also the gradation of the senses, touch alone

being universal and presupposed wherever the other senses are found. Higher still among vital functions comes locomotion, and last of all reasoning and thought. In every case the lower faculty can exist apart from the higher, but the higher presupposes those below it. The position of speculative intellect will be discussed separately [§ 7].

The answer here given amounts to this, that soul is a logical entity only, a mere *καθόλου*. We must study the different sorts of soul in the different animals and after that we may, if we please, frame a definition of soul in the abstract. But we must always remember that soul does not exist first as soul in the abstract and afterwards as nutritive soul, sensitive soul, etc. I have translated *τετράγωνον* (b 31) by "quadrilateral." It should be four-angled figure, but no English word in common use expresses this exactly, for "quadrangle" has other associations, and "tetragon" would be pedantic. Heiberg, *Mathematisches zu Aristoteles* (in *Abhandlungen zur Gesch. der math. Wissenschaften* XVIII. Heft, 1904), p. 15, has the following remarks: "*τετράγωνον* as used by the Pythagoreans meant 'square' (986 a 26) and this is its usual meaning in A. (e.g. 11 a 10, 15 a 30, 306 b 6), its meaning is doubtful in 272 b 19, but 414 b 31 it appears to mean quadrilateral (Viereck) and in 1054 b 2 *τὰ ἴσα καὶ ἰσογώνια τετράγωνα* this must be its meaning if *ἰσογώνια* is to have any sense: in 1054 b 5 either meaning is possible. Probably it was Euclid who finally got rid of the ambiguity by introducing the term *τετράπλευρον*. Neither Plato nor A. was acquainted with *τετράπλευρον*, though it occurs in the spurious writings, *Mechanica* 848 b 20, *Probl.* 911 b 3."

b 20. **τὸν αὐτὸν τρόπον**, "in exactly the same way," neither more nor less. There is no real object denoted by figure, the genus or universal, except and apart from the various particular figures. And similarly to soul, the genus or universal, there corresponds nothing except and apart from the several varieties of soul. A purely generic definition of figure, as of soul, can indeed be framed in words, but there is nothing in *rerum natura*, apart from the particular varieties of figure, that it defines. **εἷς ἂν εἴη λόγος.** An echo of 402 b 5 *εὐλαβητέον δ' ὅπως μὴ λανθάνῃ πότερον εἷς ὁ λόγος αὐτῆς ἐστί, καθάπερ ζῴου.* The precise analogue of soul, it now appears, is not so much "animal" as "figure," i.e. plane rectilinear figure, *σχῆμα ἐπίπεδον εὐθύγραμμον*.

b 21. **ἐκεῖ**, "in the latter case," in the instance adduced for purposes of illustration, i.e. figure, a subject properly foreign to the discussion and so further off. **παρά**, "beside," "other than." Cf. 408 a 23, 424 b 22. **τρίγωνόν ἐστι καὶ τὰ ἐφεξῆς.** By beginning with triangle and going on to quadrilateral, pentagon etc., A. shows that he is thinking exclusively of rectilinear figures. Otherwise circle, which is bounded by one line, or segment of circle, bounded by two lines, would come before triangle, which is the first only if the series be of rectilinear figures. Cf. *Metaph.* 1054 a 3: if the universe consisted of nothing but rectilinear figures, *σχήματα εὐθύγραμμα*, the triangle would be the unit of its plurality.

b 22. **ἐνταῦθα**, "in the case in hand," the subject under discussion, soul. **τὰς εἰρημένας**, the grades of soul enumerated at the beginning of this chapter (414 a 29—32), as also in 413 b 10—13. **γίνοιτο δ' ἄν.** Probably concessive: "it is possible to frame a generic definition, which shall be one and the same (*εἷς λόγος*)."

b 23. **καὶ ἐπὶ τῶν σχημάτων.** The genitive here and the dative b 24 after *ἐπὶ* give much the same sense. As with figures, so, too, with the different varieties of soul. In fact we have already framed such a general definition of soul, 412 b 4—6. The corresponding definition would be for figure generally, "that which is enclosed by one or more lines," and for rectilinear figure (which A. has in mind:

cf. Simpl. 106, 36 sq.) "that which is enclosed by three or more straight lines." Such definitions convey no information about any of the particular figures. Nor does the general definition of II., c. I give any information about any particular kind of soul. The only vital functions which it recognised were those common to all animals and all plants (412 a 14). **ἐφαρμόσει μὲν πᾶσιν.** Cf. *note* on 408 a 5.

b 25. **διὸ,** "and hence," i.e. because the genus figure or the genus soul denotes nothing apart from particular figures or particular souls. **γελοῖον.** The proceeding declared to be absurd is not the search for generic definitions in itself, but the neglect while seeking them to define also the particular variation of the subject under investigation. So Simpl. 107, 39 *οὐχ ἁπλῶς βούλεται γελοῖον εἶναι τὸ ζητεῖν τὸν κοινὸν λόγον, ἀλλὰ τὸ ζητεῖν τὸ κοινὸν ἀφέντα τὸ κατὰ τὸ οἰκεῖον καὶ ἄτομον εἶδος.* Cf. Philop. 257, 7—14. In other words, we must not be satisfied with the generic definition of soul obtained in II., c. I, but must go on to a detailed investigation of the different forms of soul. It is in fact this investigation which is the main subject of the rest of the treatise.

b 26. **ἐπὶ τούτων,** i.e. in the case of figure or of soul. **ἐφ' ἑτέρων.** This may refer to or include the real genera of zoology and botany. As Philop. (257, 17 sq.) puts it, even if we were studying the genus animal, it would not be enough, unless we proceed to study the different species of animals: *a fortiori* is this true in the case of "soul," which is a genus *per analogiam.* **οὐδενὸς ἔσται τῶν ὄντων.** What the merely generic definition defines is, in their cases, something non-existent. The *κοινὸν* (to use the language of 402 b 7 sq.) is not merely *ὕστερον*, it is *οὐθέν*.

b 27. **οὐδὲ κατὰ τὸ οἰκεῖον καὶ τὸ ἄτομον εἶδος.** Believing that these words form part of the relative clause, I am unable to retain the comma after *λόγος*, much less a colon. The phrase *εἶναι κατὰ τὸ οἰκεῖον καὶ τὸ ἄτομον εἶδος* bears much the same meaning as *τῷ οἰκείῳ καὶ τῷ ἀτόμῳ εἴδει ἐφαρμόζειν* (cf. b 23 *ἐφαρμόσει μὲν πᾶσιν*) or *εἶναι ἴδιος λόγος τοῦ εἴδους*. The article *τὸ* has virtually a distributive force. Whatever species we are studying is the appropriate one for the definition to fit. By *ἄτομον εἶδος* is meant the infima species which cannot be further subdivided by differences. Cf. *ὧν μηκέτι ἐστὶ διαφορά* *Anal. Post.* II. 13, 97 a 19, or, as Alex. describes them, *τὰ ἔσχατα εἴδη, ἃ οὐκέτι διαφοραῖς διαιρεῖται.* The adjective *ἄτομος* is also used by A. in his logical writings to denote individuals or particular things, *τὰ καθ' ἕκαστα* or *τινά*. In order to guard against mistake, when infimae species are intended some word is added, e.g. *ἄτομα εἴδη*, *ἄτομα εἴδει* or *ἄτομα τῷ γένει*, when the context itself does not determine the meaning intended (see Zeller, *Eng. Trans.* vol. I., p. 222 *n.* 2, p. 216 *n.* 1).

b 27. **ἀφέντας τὸν τοιοῦτον.** These words, which are specially important for the interpretation of the sentence, are best referred to the *οἰκεῖον καὶ ἄτομον εἶδος* just mentioned. If so, *τὸν τοιοῦτον* = *τὸν κατὰ τὸ οἰκεῖον καὶ τὸ ἄτομον εἶδος* (int. *λόγον*). The participle *ἀφέντας* is harsh. It of course agrees with the subject of *ζητεῖν*, and has a conditional force "if (by so doing) we neglect the definition of the particular species."

Wallace rightly paraphrases the whole sentence: "And hence it is absurd both in this case and in others to seek for a universal definition which shall be peculiar to no one form of existence nor framed with reference to the particular and individual species, if such common definition makes us neglect particular analysis." Pacius (as did Them. before him) refers *τὸν τοιοῦτον* to A.'s own definition as given in II., c. I. Zabarella and M. Rodier in his translation make it refer to *τὸν κοινὸν λόγον*. Trend. suggested that it might be taken as = ad certam qualitatem redacta (int. notio), which is almost equivalent to "a specific definition." Of

these the first is the most unreasonable. Again, it has been proposed to regard A. as mediating between an excessive attachment either to the generic or to the particular definition, and some, who adopt this view, seem to understand *ζητεῖν* with *οὐδὲ κατὰ τὸ οἰκεῖον καὶ τὸ ἄτομον εἶδος*. But this would require *μηδέ*, and not *οὐδέ*. Others in place of *οὐδὲ* would read *οὐδὲ* <*δεῖ*>. The sense would then be, "but again we ought not to confine ourselves to the appropriate individual species," to the neglect of the generic definition. This interpretation, though professedly making A. hold the balance impartially between the generic and specific definition, is diametrically opposed to the one I prefer, so far as regards the words *τὸν τοιοῦτον*, but no result in the treatise is, as a matter of fact, deduced from the generic definition except that soul is moving and final cause, as well as form, of living body, 415 b 8 sqq. The study of soul in the abstract leads to no discoveries and would therefore be exposed to the censure which A. has unsparingly bestowed upon definitions, such as harmony, 408 a 3—5, or self-moving number, 409 b 13—18.

b 28. **τῷ περὶ τῶν σχημάτων καὶ τὰ κατὰ ψυχήν.** There does not seem to be much difference between these prepositions as here used, nor between either and *ἐπὶ* c. gen. or (less commonly, as *supra* b 24) c. dat. Cf. also *τὰ περὶ τὸν νοῦν*, 429 b 22.

b 29. **ἐν τῷ ἐφεξῆς ὑπάρχει δυνάμει τὸ πρότερον.** Here, as wherever *ἐν οἷς ἐστὶ τὸ πρότερον καὶ τὸ ὕστερον* denotes a class of concepts, the priority intended is not priority in time. Its nature could not be better illustrated than by this example of figures. A. holds the triangle to be the simplest rectilinear figure (seeing that two straight lines cannot enclose a space). Given the triangle, the quadrilateral, pentagon etc. can be derived from it by combining two, three or more triangles; while, if there were no such thing as a triangle, the other rectilinear figures, thus dependent upon it, could not exist. The triangle has thus a logical priority among rectilinear figures: it is presupposed by them. Other examples are arithmetical numbers (*Metaph.* 999 a 6 sqq., 1080 b 11 sqq.), polities and forms of constitution (*Pol.* 1275 a 35 sqq.). In all these the relation between the varieties (of figure, number, polity, and so likewise of soul) is not a relation between species of a genus proper, the latter being mutually exclusive. If e.g. we divide *ζῷον* into *ἔναιμον* and *ἄναιμον*, nothing *ἔναιμον* can be *ἄναιμον*, the divisions are mutually exclusive. Whereas *αἰσθητικὸν* is at the same time, potentially, *θρεπτικόν*. **δυνάμει.** If we draw the diagonal of our quadrilateral what was potentially triangle becomes actually so.

b 32. **ὥστε.** This is the conclusion which follows so soon as we learn the true nature of the varieties of soul. To have found a generic definition does not free us from the obligation to investigate each form separately. Those, however, can only be studied in the concrete, in plant, in beast, in man.

b 33. **διὰ τίνα δ' αἰτίαν.** The reason is that nature does nothing in vain. All other animals are subservient to man: *De Part. An.* IV. 10, *Pol.* 1256 b 15—26, *Metaph.* 1075 a 16 sqq.

415 a 1. **σκεπτέον.** The sequence is accounted for on teleological grounds in III. cc. 12, 13, the assumption given in the last note being the starting point. **ἄνευ μὲν γάρ.** The *γὰρ* certainly does not introduce the reason of the fact asserted, but merely justifies the assertion, expanding *τῷ ἐφεξῆς οὕτως ἔχουσι*.

a 2. **χωρίζεται.** Cf. *supra* 413 a 31 and 410 b 19—24.

a 4. **ἁφή.** Cf. *supra* 414 a 3.

a 5. **πολλά.** Of these lower forms of life, sponges, zoophytes, and some crustacea were known to the ancients and are mentioned by A., who also asserts

(*Metaph.* 980 b 23) that bees have no sense of hearing. Whether ants can hear has not yet been finally determined.

a 7. τὰ δ' οὐκ ἔχει. Cf. 410 b 19, 413 b 2 sq.

a 10. τοῖς μὲν οὐδὲ φαντασία. That some inferior animals have not φαντασία is implied in 428 a 8 *εἶτα αἴσθησις μὲν ἀεὶ πάρεστι, φαντασία δ' οὔ. εἰ δὲ τῇ ἐνεργείᾳ τὸ αὐτό, πᾶσιν ἂν ἐνδέχοιτο τοῖς θηρίοις φαντασίαν ὑπάρχειν*: cf. 428 a 21 *τῶν δὲ θηρίων οὐθενὶ ὑπάρχει πίστις, φαντασία δ' ἐν πολλοῖς*, and *ib.* 23 *τῶν δὲ θηρίων ἐνίοις φαντασία μὲν ὑπάρχει*, where *ἐνίοις* and *πολλοῖς* imply that φαντασία is not universally found. This is true, in so far as the term φαντασία is limited (as sometimes it is in A.) to percepts retained. But it is not in this sense of φαντασία that (in 433 a 11 sq. and 434 a 4) it is said to be implied in all *αἴσθησις*.

a 11. τὰ δὲ ταύτῃ μόνῃ, i.e. animals in general: cf. *Metaph.* 980 b 26. By *μόνῃ* is implied that they do not rise to the possession of λογισμός, not, of course, that they are without *ἐπιθυμία*. Cf. 429 a 6 *διὰ τὸ μὴ ἔχειν νοῦν, οἷον τὰ θηρία*. **τοῦ θεωρητικοῦ νοῦ.** The subject is finally taken up in III., cc. 4—8.

a 13. οὗτος, i.e. the account of the several faculties which it has now been decided to give. **οἰκειότατος.** Probably an absolute superlative "as relevant as anything can be." We must not begin by asking what is soul apart from the nutritive, sensitive, intellective faculties, etc. **καί,** "also," emphasises the *περὶ ψυχῆς* which follows, "is at the same time the most appropriate description."

CHAPTER IV.

415 a 14—22. Since the study of the several faculties is an integral part of psychology, the student must begin his investigations by ascertaining what each of them is before proceeding further. But if the faculties are to be defined, we must first enquire about the corresponding processes or operations, and this again requires a preliminary investigation of the correlative objects, e.g. the objects of sense and of thought [§ 1].

The order of investigation here prescribed settles the question raised in 402 b 11—15.

415 a 14. μέλλοντα. Cf. for the turn of phrase *Pol.* 1288 b 5.

a 15. περὶ τῶν ἐχομένων καὶ περὶ τῶν ἄλλων. The task proposed in 402 a 7 sq. was twofold, to investigate (1) the essence (*οὐσία*) of soul, and (2) its properties (*ὅσα συμβέβηκε περὶ αὐτήν*) which must be taken to mean "essential properties," *καθ' αὑτὰ συμβεβηκότα*, and are explained (*loc. cit.*) to include properties shared by the body as well as those, if any, peculiar to the soul itself. We should have expected the same twofold division here, but in place of *τὰ καθ' αὑτὰ ὑπάρχοντα, τὰ ἐχόμενα καὶ τὰ ἄλλα* are apparently substituted. These are general expressions, "what comes next, and the rest," and Them. passes over *τὰ ἄλλα* altogether. He says (49, 15 H., 90, 17 Sp.) *ἐχόμενα δέ ἐστι τὰ καθ' αὑτὰ ὑπάρχοντα ἑκάστῃ δυνάμει.* Philop. (263, 13 sqq.) agrees as to *τὰ ἐχόμενα*, while offering a number of suggestions as to *τὰ ἄλλα* (263, 18—24). Simpl. (109, 16 sq. *σημαίνει δὲ τὸ μὲν εἶδος τῷ τί ἐστι, τοῖς ἐχομένοις δὲ τὰ ὁριζόμενα, ὡς τοῖς ἄλλοις τὰ ὑπάρχοντα*) is clearly astray. After the essence must come the essential properties. It can hardly be maintained that in the present treatise these properties are exhaustively discussed, and this is A.'s own admission at the opening of the *De Sensu*, where, in a passage (436 a 1—b 1) too long to quote in full, he sketches the programme of the *Parva Naturalia* (*ἐχόμενόν ἐστι ποιήσασθαι τὴν ἐπίσκεψιν περὶ τῶν ζῴων καὶ τῶν ζωὴν ἐχόντων ἁπάντων, τίνες εἰσὶν*

ἴδιαι καὶ τίνες κοιναὶ πράξεις αὐτῶν. τὰ μὲν οὖν εἰρημένα περὶ ψυχῆς ὑποκείσθω, περὶ δὲ τῶν λοιπῶν λέγωμεν κτέ.). If we are to distinguish between *τὰ ἐχόμενα* and *τὰ ἄλλα*, which is at least doubtful, it may be conjectured that the last items on this programme, *De Sensu* 436 a 12—19, Health and Sickness, Youth and Old Age, constitute *τὰ ἄλλα*, "other matters," while *τὰ ἐχόμενα* are the essential properties of the several faculties.

a 18. πρότερον ἔτι λεκτέον. Cf. 402 b 9—16. The questions as to priority there raised are here decided. What are there called *τὰ ἔργα* are here called *αἱ ἐνέργειαι καὶ αἱ πράξεις.*

a 19. κατὰ τὸν λόγον. These words go closely with *πρότεραι.* The priority is a logical priority. Two views of this phrase have been taken, according as it does or does not mean the same as *οὐσίᾳ πρότερον.* In the former case it is "in the order of thought" = in the order of real existence, in nature's order; in the latter case we should render "in the order of our thought" or of knowledge. *Ind. Ar.* 435 a 6 *λόγῳ πρότερον* vel ita usurpatur ut distinguatur ab eo quod est *οὐσίᾳ πρότερον*...vel ut idem sit ac *πρότερον οὐσίᾳ.* Bonitz inclines to the view of the Greek commentators, for Alex. Aphr. (ap. Philop. 264, 15—24), Philop. (264, 11—15), and Simpl. (109, 24—30) fairly agree with Them., according to whom (49, 18 sqq. H., 90, 21 sqq. Sp.) it is relatively to us that activities are prior and better known. What takes place, the operation or function, is relatively clear: the faculty or part of the soul is relatively obscure to us. We observe operations and from them infer the presence of the faculty which exists to realise them. But in the order of nature it is the reverse; the faculties must exist before they can operate. It should be remembered that the enquiry before us is methodological. Them. explains *πρότεραι* by *σαφέστεραι πρὸς ἡμᾶς*, more evident from our point of view. Thus we select for earlier treatment what is easier for us to understand and after studying this we shall be in a better position to explain what remains. This priority of the operation to the faculty in the order of knowledge would alone be ample justification for A.'s procedure. The priority of *ἐνέργεια* to *δύναμις* is established in *Metaph.* Θ., c. 8, 1049 b 10—12 sqq., viz. its priority *λόγῳ* 1049 b 12—17, *χρόνῳ*, 1049 b 17—1050 a 3, *οὐσίᾳ* 1050 a 4 sqq. Cf. 1071 b 12—1072 a 18. It is doubtful, however, whether this doctrine is explicitly present to A.'s mind in our present passage, though he refers to it below 431 a 1 sqq.

a 22. οἷον, "namely": *Ind. Ar.* p. 502 a 7 inde eo deflectit usus ut *οἷον* omnino explicandi vim habeat, i q nempe, nimirum, scilicet. Cf. Waitz ad *Categ.* 3, 1 b 18, Bz. ad *Metaph.* 985 b 6. So 421 b 9, 424 b 30, 426 b 27, 429 a 6, 8, 434 b 15. **τροφῆς.** Nutriment in the concrete is co-ordinate, as an object, with sensibles and cogitables. We must study all three objects in order to know about the operations of nutrition, perception and thought respectively.

415 a 22—b 7. We begin, then, with the nutritive faculty, the lowest and the most widely distributed. It has two functions, the propagation of the species and assimilation of nutriment. The former is a means to the only immortality which perishable creatures can secure [§ 2].

a 23. τροφῆς. As this word can mean nutrition as well as nutriment, it is fitly co-ordinated with *γέννησις.*

a 26. γεννῆσαι. Cf. *De Gen. An.* II. 4, 740 b 34 *ἡ γὰρ αὐτή ἐστιν ὕλη ᾗ αὐξάνεται καὶ ἐξ ἧς συνίσταται τὸ πρῶτον, ὥστε καὶ ἡ ποιοῦσα δύναμις ταὐτὸ τῷ ἐξ ἀρχῆς. μείζων δὲ αὕτη ἐστίν. εἰ οὖν αὕτη ἐστὶν ἡ θρεπτικὴ ψυχή, αὕτη ἐστὶ καὶ ἡ γεννῶσα· καὶ τοῦτ' ἐστὶν ἡ φύσις ἡ ἑκάστου, ἐνυπάρχουσα καὶ ἐν φυτοῖς καὶ ἐν ζῴοις πᾶσιν.* This explains the point of view from which the two functions are regarded as of identical origin, both being moments in that instinct of self-

preservation, which aims at the continued existence of the individual and through him of the race. **φυσικώτατον γάρ.** Cf. *Pol.* 1252 a 26 *ἀνάγκη δὴ πρῶτον συνδυάζεσθαι τοὺς ἄνευ ἀλλήλων μὴ δυναμένους εἶναι, οἷον θῆλυ μὲν καὶ ἄρρεν τῆς γενέσεως ἕνεκεν (καὶ τοῦτο οὐκ ἐκ προαιρέσεως, ἀλλ' ὥσπερ καὶ ἐν τοῖς ἄλλοις ζῴοις καὶ φυτοῖς φυσικὸν τὸ ἐφίεσθαι, οἷον αὐτό, τοιοῦτον καταλιπεῖν ἕτερον)*: also *De Gen. An.* II. 1, 735 a 17—19, I. 23, 731 b 24 sqq., III. 10, 760 a 35 sqq.

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415 b 8—416 a 18. Soul is the principle and cause of a living body in each of three senses [§ 3]. It is formal cause [§ 4]; it is final cause [§ 5]. That it is also moving cause is evident when we consider that motion includes qualitative change and quantitative change or growth, as well as spatial motion, which is not an attribute of all living things; and further that sensation is a qualitative change, while growth is implied in nutrition, and nutrition is confined to living things [§ 6]. We may remark in passing that Empedocles was mistaken in attributing downward growth to earth and upward growth to fire, the fact being that the roots of plants find their analogues in the heads of animals, not to mention the objection that, if parts of an organism tend in opposite directions, a central principle is needed to keep them together [§ 7]. Another erroneous view makes fire the sole cause of nutrition and growth, whereas it is only a contributory cause, soul itself being the true cause [§ 8].

This remarkable passage is at any rate a digression, as 416 a 18 might follow 415 b 7 without detriment to the argument. It is also strange that the term *τροφή* occurs only once, towards the end of the passage, 416 a 10, as the proof that growth accompanies life makes no direct mention of the very faculty, the nutritive, which we are ostensibly investigating in this chapter. It is strange too, that, while discussing this faculty, we should come across a quite general proof that soul is the cause of the living body in three senses, a proof equally applicable to all the faculties. One would have thought that such a proof would have been more in place at some point nearer the definition of soul as entelechy, the definition which is assumed in the argument of the passage.

b 8. **αἰτία καὶ ἀρχή**. For *ἀρχή* cf. 402 a 6 **οἷον ἀρχή**, *note*.

b 9. **πολλαχῶς**. For the three meanings of cause here given see *Metaph.* 983 a 26 *τὰ δ' αἴτια λέγεται τετραχῶς, ὧν μίαν μὲν αἰτίαν φαμὲν εἶναι τὴν οὐσίαν καὶ τὸ τί ἦν εἶναι* (*ἀνάγεται γὰρ τὸ διὰ τί εἰς τὸν λόγον ἔσχατον, αἴτιον δὲ καὶ ἀρχὴ τὸ διὰ τί πρῶτον*), *ἑτέραν δὲ τὴν ὕλην καὶ τὸ ὑποκείμενον, τρίτην δὲ ὅθεν ἡ ἀρχὴ τῆς κινήσεως,*

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b 6. **ταύτῃ**. The not very usual addition of the antecedent *ταύτῃ* after the relative, and in this position after the verb, lends emphasis to the manner of participation. Thus, then, "must this mortal put on immortality." With *ᾗ δύναται μετέχειν ἕκαστον, κοινωνεῖ ταύτῃ* cf. *De Gen. An.* II. 1, 731 b 31 *ἐπεὶ γὰρ ἀδύνατος ἡ φύσις τοῦ τοιούτου γένους ἀΐδιος εἶναι, καθ' ὃν ἐνδέχεται τρόπον, κατὰ τοῦτόν ἐστιν ἀΐδιον τὸ γινόμενον. ἀριθμῷ μὲν οὖν ἀδύνατον (ἡ γὰρ οὐσία τῶν ὄντων ἐν τῷ καθ' ἕκαστον· τοιοῦτον δ' εἴπερ ἦν, ἀΐδιον ἂν ἦν), εἴδει δ' ἐνδέχεται. διὸ γένος ἀεὶ ἀνθρώπων καὶ ζῴων ἐστὶ καὶ φυτῶν.* Unity of the species is maintained, but not the personal identity of its members. The race persists, the individual perishes: which exactly accords with the account given 408 b 18—29.

b 7. **ἀλλ' οἷον αὐτό**, int. *τοιοῦτον* as above a 28. **ἀριθμῷ μὲν οὐχ ἕν, εἴδει δ' ἕν**. For the antithesis cf. *Metaph.* 1016 b 31 *ἔτι δὲ τὰ μὲν κατ' ἀριθμόν ἐστιν ἕν, τὰ δὲ κατ' εἶδος, τὰ δὲ κατὰ γένος, τὰ δὲ κατ' ἀναλογίαν· ἀριθμῷ μὲν ὧν ἡ ὕλη μία, εἴδει δ' ὧν ὁ λόγος εἷς.* Cf. also *supra* 411 b 20 *ὡς τὴν αὐτὴν ἔχοντα ψυχὴν τῷ εἴδει, εἰ καὶ μὴ ἀριθμῷ.*

415 b 8—416 a 18. Soul is the principle and cause of a living body in each of three senses [§ 3]. It is formal cause [§ 4]; it is final cause [§ 5]. That it is also moving cause is evident when we consider that motion includes qualitative change and quantitative change or growth, as well as spatial motion, which is not an attribute of all living things; and further that sensation is a qualitative change, while growth is implied in nutrition, and nutrition is confined to living things [§ 6]. We may remark in passing that Empedocles was mistaken in attributing downward growth to earth and upward growth to fire, the fact being that the roots of plants find their analogues in the heads of animals, not to mention the objection that, if parts of an organism tend in opposite directions, a central principle is needed to keep them together [§ 7]. Another erroneous view makes fire the sole cause of nutrition and growth, whereas it is only a contributory cause, soul itself being the true cause [§ 8].

This remarkable passage is at any rate a digression, as 416 a 18 might follow 415 b 7 without detriment to the argument. It is also strange that the term *τροφή* occurs only once, towards the end of the passage, 416 a 10, as the proof that growth accompanies life makes no direct mention of the very faculty, the nutritive, which we are ostensibly investigating in this chapter. It is strange too, that, while discussing this faculty, we should come across a quite general proof that soul is the cause of the living body in three senses, a proof equally applicable to all the faculties. One would have thought that such a proof would have been more in place at some point nearer the definition of soul as entelechy, the definition which is assumed in the argument of the passage.

b 8. **αἰτία καὶ ἀρχή**. For *ἀρχή* cf. 402 a 6 **οἷον ἀρχή**, *note*.

b 9. **πολλαχῶς**. For the three meanings of cause here given see *Metaph.* 983 a 26 *τὰ δ' αἴτια λέγεται τετραχῶς, ὧν μίαν μὲν αἰτίαν φαμὲν εἶναι τὴν οὐσίαν καὶ τὸ τί ἦν εἶναι (ἀνάγεται γὰρ τὸ διὰ τί εἰς τὸν λόγον ἔσχατον, αἴτιον δὲ καὶ ἀρχὴ τὸ διὰ τί πρῶτον), ἑτέραν δὲ τὴν ὕλην καὶ τὸ ὑποκείμενον, τρίτην δὲ ὅθεν ἡ ἀρχὴ τῆς κινήσεως,*

τετάρτην δὲ τὴν ἀντικειμένην αἰτίαν ταύτῃ, τὸ οὗ ἕνεκα καὶ τἀγαθόν (*τέλος γὰρ γενέσεως καὶ κινήσεως πάσης τοῦτ' ἐστίν*). Cf. *Metaph.* 1013 a 24 sqq., *Phys.* II. 3, especially 194 b 23 sqq. and *ib.* 7, 198 a 14. In all these passages material cause or substratum ranks as a fourth cause distinct from, and contrasted with, the other three. **διωρισμένους.** The reference is perhaps to *Metaph.* 1013 a 24 sqq. cited above.

b 10. τρεῖς. The position of *τρεῖς* is no argument against its genuineness, the rule being that, when there are two epithets, it is sufficient that one should go with the article, the other may be placed where you please, as here after the noun. The paraphrase of Them. (50, 26 H., 92, 25 Sp.) is *πλεοναχῶς δὲ λεγομένης τῆς ἀρχῆς καὶ τῆς αἰτίας ὁμοίως ἡ ψυχὴ κατὰ τοὺς διωρισμένους ἐν τοῖς περὶ τῶν ἀρχῶν τρόπους τριχῶς ἐστὶν αἰτία*, which has suggested to Professor H. Jackson the conjecture *τριχῶς* for *τρεῖς*. Them. is however quite within his rights as a judicious interpreter. **ὅθεν ἡ κίνησις αὐτή.** "The soul is in itself the origin of motion" as opposed to something which derives from another the motion which it transmits. The accentuation of codd. E S *αὐτῇ* seems indefensible, for it would be intolerably harsh to supply *καὶ γὰρ ὅθεν ἡ κίνησις αὐτῇ, καὶ οὗ ἕνεκα*= for soul has the moving cause and the final cause, and then go on in a new sentence with *καὶ ὡς ἡ οὐσία τῶν ἐμψύχων σωμάτων ἡ ψυχὴ αἰτία*=and the soul is the cause of living things in the sense of substance.

b 12 τὸ γὰρ...14 τούτου ἡ ψυχή. In b 14 *τούτου*, though it has poor authority (see critical *notes*), decidedly improves the cogency of the argument. By *τούτων*, which has supplanted *τούτου* in the vulgate, must be meant *τῶν ζώντων*, cf. 402 a 6 sq. Here we have a new setting of the proof that soul is the formal cause of the living organism. In logical form the proof runs as follows: the essence, or substance, of everything is the cause of its being; the being of living organisms is life; it follows that the essence, or substance, of living organisms is the cause of their life. But the cause of the life (*τοῦτου*=*τοῦ ζῆν*) of living things is soul (cf. 414 a 12 "the soul is that whereby primarily we live"). Therefore soul is the essence, or substance, of the living organism. This statement of the case has decided advantages, when compared with that of 412 a 11—b 5, or 414 a 4—14.

b 13. τὸ δὲ ζῆν τοῖς ζῶσι τὸ εἶναί ἐστιν. Waitz, commenting on *Anal. Prior.* II. 21, 67 b 12 *τὸ ἀγαθῷ εἶναι*, has an interesting note on the light thrown by such a sentence as this and by 431 a 19 *τὸ δὲ ἔσχατον ἕν, καὶ μία μεσότης· τὸ δ' εἶναι αὐτῇ πλείω* upon the origin of the construction by which *τὸ εἶναι* with the dative of the predicate does duty for the notion of a thing in the abstract, "substantialis notio." Waitz says: Brevitas scilicet in dicendo et mutatus verborum ordo obscuritatem fecerunt. The dative is originally a dative of the possessor, like *τοῖς ζῶσι* here and *αὐτῇ* (431 a 19), but in the stereotyped phrase it is as a rule prefixed to the infinitive, and then it is predicative and seldom recurs as subject. Cf. *Top.* V. 4, 133 b 33 *ἀλλ' ἄλλο λέγεται τῷ ἕτερον εἶναι αὐτοῖς* [these are *τὸ ᾧ συμβέβηκε* and *τὸ συμβεβηκὸς μετὰ τοῦ ᾧ συμβέβηκε λαμβανόμενον*] *τὸ εἶναι· οὐ ταὐτὸν γάρ ἐστιν ἀνθρώπῳ τε τὸ εἶναι ἀνθρώπῳ καὶ λευκῷ ἀνθρώπῳ τὸ εἶναι ἀνθρώπῳ λευκῷ.*

b 14. ἔτι τοῦ δυνάμει ὄντος λόγος ἡ ἐντελέχεια. It is to be noted that *λόγος* is one of the terms used for "formal cause" (v. *supra* 403 b 2, 414 a 9, 13 sq.). This elliptical argument fully stated would run thus. Of whatever exists potentially the entelechy is the notion, essence or formal cause. But from its definition in 412 a 27 sq. we have as minor premiss, "But soul is the entelechy of a potential animal or plant"; whence the conclusion, "soul is the formal cause."

b 15. **οὗ ἕνεκεν.** We might have expected an article before *οὗ ἕνεκεν*, but the prepositional phrase is virtually a noun and may be construed even without the article as a quasi-genitive with *αἰτία*; cf. *supra* b 10 *ὅθεν ἡ κίνησις αὐτή, καὶ οὗ ἕνεκα*: cf. also *Pol.* 1253 b 3 *οἰκονομίας δὲ μέρη, ἐξ ὧν πάλιν οἰκία συνέστηκεν* where the relative phrase *ἐξ ὧν...συνέστηκεν* is treated as a noun in the genitive case. See Newman's note *ad loc.*; cf. also *Pol.* 1258 b 27 sqq.

b 17. **τοῦτ'**, int. *τὸ οὗ ἕνεκα.* **τοιοῦτον**, int. *τέλος* or *τὸ οὗ ἕνεκα.*

b 18. **καὶ κατὰ φύσιν.** Not only is soul the end, body and bodily parts the mere instruments for the realisation of the end, but nature intended this, it is part of her plan. Caution, however, is needed in the language we use, for *φύσις* is to A., not an external directing intelligence, but an indwelling principle. Cf. *De Gen. An.* II. 4, 741 a 1 cited in *note* on 415 a 26 *supra*; also see *note* on 406 a 14. Cf. Simpl. 111, 25 sqq. **τὰ φυσικὰ σώματα.** By this we must (as Philop. reminds us) understand all natural *living* bodies. Cf. 412 a 11—15, where natural bodies are classified as animate and inanimate. In fact *σῶμα* is slipping into this narrower meaning in 412 b 26—413 a 4, see *note* on 413 a 2. **τῆς ψυχῆς ὄργανα.** Cf. 407 b 25, with *note* on *δεῖ γάρ*, *Pol.* 1254 a 34 *ψυχῆς καὶ σώματος, ὧν τὸ μὲν ἄρχον ἐστὶ φύσει τὸ δ' ἀρχόμενον.* This conception of body as soul's instrument is at once the complement and the antithesis of Plato's view in the *Phaedo* 80 A that, when soul and body are united, nature orders the soul to rule and govern and the body to obey and serve.

b 22. **οὐ πᾶσι δ'.** Cf. 410 b 18 sqq., 413 b 1 sqq. All plants and some animals are without locomotion.

b 23. **ἔστι δὲ καὶ ἀλλοίωσις καὶ αὔξησις κατὰ ψυχήν.** Qualitative change and growth are due to soul, though they take place in body. They are processes in which both share. Cf. *De Sensu* 1, 436 a 6—8 and 436 b 6—8. We note that A. is using the categories (place, quality, quantity) to determine the various kinds of motion (*κίνησις*) exactly as in 406 a 12 sqq.

b 24. **ἡ μὲν γὰρ αἴσθησις ἀλλοίωσίς τις.** We shall hear more of this in II., c. 5, where the discussion is introduced (416 b 34) by the similar words *δοκεῖ γὰρ ἀλλοίωσίς τις εἶναι* (int. *ἡ αἴσθησις*).

b 28. **οὐ καλῶς εἴρηκε τοῦτο.** We may, with Them., understand the error attributed to Empedocles to be the explanation of growth as due to the natural tendencies of the elements assimilated. Plants contain earth and fire, earth makes the roots grow down, because it has a downward tendency, fire has an upward tendency and therefore the branches, which contain fire, grow upwards. The pronoun *τοῦτο* marks the subject treated. So Wallace "This is a subject in which Empedocles has not expressed himself correctly." Karsten's conjecture *προσθέσει* for *προστιθείς*, for which he cites *De Gen. et Corr.* II. 6, 333 a 35 *οὐδ' αὔξησις ἂν εἴη κατ' Ἐμπεδοκλέα, ἀλλ' ἡ κατὰ πρόσθεσιν*, seems unnecessary, even if we grant his premiss "talem *αὔξησιν* Aristoteles *πρόσθεσιν* vocat." **προστιθείς**, "when he adds." Presumably A. would accept part of the account given by Empedocles.

416 a 2. **λαμβάνει** approximates here, as often, e.g. 424 a 17, to *ὑπολαμβάνει.* Compare what is said *Ind. Ar.* s.vv. 422 b 33 sqq., 799 b 33—45.

a 3. **οὐ γὰρ τὸ αὐτὸ...καὶ τῷ παντί,** "not the same...as for the whole universe": this *καὶ* should be taken closely with *τὸ αὐτό.* A. believed the whole physical universe to be spherical in shape, having a centre and circumference; rectilinear motion from the centre towards the circumference is upward movement and that from the circumference towards the centre is downward. Cf. 406 a 27—30, *De Caelo* IV. 1, 308 a 13—31, where A. defines his own view in opposition to that of Plato, who in the *Timaeus* (63 B sqq.) denied that there was

up or down in the universe: also *Phys.* IV. 1, 208 b 8—14. As applied to an animal or a plant, however, the words "up" and "down" are used in a purely conventional sense: *ib.* 208 b 14 ἔστι δὲ τὰ τοιαῦτα οὐ μόνον πρὸς ἡμᾶς, τὸ ἄνω καὶ κάτω καὶ δεξιὸν καὶ ἀριστερόν· ἡμῖν μὲν γὰρ οὐκ ἀεὶ τὸ αὐτό, ἀλλὰ κατὰ τὴν θέσιν, ὅπως ἂν στραφῶμεν, γίνεται...b 18 ἐν δὲ τῇ φύσει διώρισται χωρὶς ἕκαστον. οὐ γὰρ ὅ τι ἔτυχέν ἐστι τὸ ἄνω, ἀλλ' ὅπου φέρεται τὸ πῦρ καὶ τὸ κοῦφον· ὁμοίως δὲ καὶ τὸ κάτω οὐχ ὅ τι ἔτυχεν, ἀλλ' ὅπου τὰ ἔχοντα βάρος καὶ τὰ γεηρά. The part where the mouth, or whatever organ receives food, is found is regarded as the upper part and the rest, in contradistinction, as the lower part. Cf. *De Incessu An.* 4, 705 a 32—b 1, *De Iuv. et Sen.* 1, 468 a 1 καθ' ὃ μὲν γὰρ εἰσέρχεται μόριον ἡ τροφή, ἄνω καλοῦμεν, πρὸς αὐτὸ βλέποντες ἀλλ' οὐ πρὸς τὸ περιέχον ὅλον, κάτω δὲ καθ' ὃ τὸ περίττωμα ἀφίησι τὸ πρῶτον. ἔχει δ' ἐναντίως τοῖς φυτοῖς τοῦτο καὶ τοῖς ζῴοις, *Hist. An.* II. 1, 500 b 28 λέγομεν δὲ ἄνω τὸ ἀπὸ κεφαλῆς μέχρι τοῦ μορίου ᾗ ἡ τοῦ περιττώματός ἐστιν ἔξοδος, κάτω δὲ τὸ ἀπὸ τούτου λοιπόν. The similarity of function between the roots of plants and the mouths of animals led to the remark frequently made (see next *note*) that plants are placed in the earth upside down; see *De Iuv.* loc. cit. and *De Part. An.* IV. 7, 683 b 18.

a 4. **ὡς ἡ κεφαλή.** See *De Part. An.* IV. 10, 686 b 31 μικρὸν δ' οὕτω προβαίνοντα καὶ τὴν ἀρχὴν ἔχουσι κάτω, καὶ τὸ κατὰ τὴν κεφαλὴν μόριον τέλος ἀκίνητόν ἐστι καὶ ἀναίσθητον, καὶ γίνεται φυτόν, ἔχον τὰ μὲν ἄνω κάτω, τὰ δὲ κάτω ἄνω; also *De Incessu An.* 4, 705 a 29. The degradation of animal to plant, or rather the position of the plant in the scale of organic being, is thus described, "it is rooted to the ground, and the upper part of it, which corresponds to the head of animals, is turned downwards." A.'s criticism assumes that the head contains fire, if anything does, for it grows upwards, and therefore the roots of plants ought to grow upwards upon the theory of Empedocles.

a 5. **τοῖς ἔργοις.** The functions are the standard by which the identity or difference of the instruments is determined. See *note* on 412 b 18, ἐπὶ τῶν μερῶν. This principle is enforced and expounded throughout the *De Part. An.*, a treatise by which A. founded the science of comparative morphology.

a 6. **τί τὸ συνέχον.** Cf. 411 b 5—14 and *notes.*

a 8. **τοῦτ' ἔστιν ἡ ψυχή.** Cf. *supra* 415 b 23 ἔστι δὲ καὶ ἀλλοίωσις καὶ αὔξησις κατὰ ψυχήν. Whether Empedocles really thus ignored this unifying function of soul is extremely doubtful. Theophrastus follows A. in emphasising the unity of the vegetative principle in plants: Theoph. *De Caus. Plant.* I. 12, § 5 ἓν γάρ τι τὸ γεννῶν, οὐχ ὥσπερ Ἐμπεδοκλῆς διαιρεῖ καὶ μερίζει, τὴν μὲν γῆν εἰς τὰς ῥίζας, τὸν δ' αἰθέρα εἰς τοὺς βλαστοὺς ὡς ἑκάτερον ἑκατέρου χωριζόμενον, ἀλλ' ἐκ μιᾶς ὕλης καὶ ὑφ' ἑνὸς αἰτίου γεννῶντος. **αἴτιον...9 τρέφεσθαι.** And so αἴτιον τοῦ ζῆν: cf. 415 b 12—14. For the plant to live is simply to grow and to be nourished.

a 9. **δοκεῖ δέ τισιν**: Heraclitus and (according to Simpl.) Hippasus. The doctrine of vital heat passed from Heraclitus to the Stoics: cf. Cic. *De Nat. Deor.* II. §§ 23—30, 57, 58, especially § 27; Iam vero reliqua quarta pars mundi, ea et ipsa tota natura fervida est et ceteris naturis omnibus salutarem impertit et vitalem calorem.

a 11 **μόνον...12 καὶ αὐξόμενον,** i.e. the only one which in its elemental state and before it is compounded in τὰ μεικτὰ admits of nutrition and growth. ἢ is corrective, "I mean."

a 13. **τὸ δὲ συναίτιον μέν πώς ἐστιν, οὐ μὴν ἁπλῶς γε αἴτιον.** Cf. for τὸ 408 b 5. This is one of many instances in A. where μὲν is answered by οὐ μὴν or οὐ μὴν... γε, these latter particles replacing the more common οὐδέ, either because οὐδὲ in the second clause would be ambiguous or for some other reason of convenience; cf. 424 a 26 μέγεθος μὲν γὰρ ἄν τι εἴη τὸ αἰσθανόμενον· οὐ μὴν τό γε αἰσθητικῷ εἶναι

οὐδ' ἡ αἴσθησις μέγεθός ἐστιν, and 429 b 8 ἔστι μὲν καὶ τότε δυνάμει πως, οὐ μὴν ὁμοίως καὶ πρὶν μαθεῖν ἢ εὑρεῖν. Cf. also *Eth. Nic.* 1173 b 26 αἱ μὲν ἡδοναὶ αἱρεταί εἰσιν, οὐ μὴν ἀπό γε τούτων, ὥσπερ καὶ τὸ πλουτεῖν, προδόντι δ' οὔ, καὶ τὸ ὑγιαίνειν, οὐ μὴν ὁτιοῦν φαγόντι. The antithesis between συναίτιον and αἴτιον ἁπλῶς comes to A. from Plato; cf. *Phaedo* 99 B ὅτι ἄλλο μέν τί ἐστι τὸ αἴτιον τῷ ὄντι, ἄλλο δ' ἐκεῖνο, ἄνευ οὗ τὸ αἴτιον οὐκ ἄν ποτ' εἴη αἴτιον : see also *Tim.* 46 D. By a "joint cause" or concurrent cause (causa adiuvans) is meant a necessary condition, hence in *Metaph.* Δ., c. 5, a chapter which deals with various meanings of the term "necessary," we find συναίτιον used to explain the necessary condition or οὗ ἄνευ οὐκ as it is often termed: 1015 a 20 ἀναγκαῖον λέγεται, οὗ ἄνευ οὐκ ἐνδέχεται ζῆν ὡς συναιτίου, οἷον τὸ ἀναπνεῖν καὶ ἡ τροφὴ τῷ ζῴῳ ἀναγκαῖον· ἀδύνατον γὰρ ἄνευ τούτων εἶναι. So, too, τροφή is explained as a necessary condition of life or subsistence in *De Part. An.* I. 1, 642 a 7 λέγομεν γὰρ τὴν τροφὴν ἀναγκαῖόν τι κατ' οὐδέτερον τούτων τῶν τρόπων, ἀλλ' ὅτι οὐχ οἷόν τ' ἄνευ ταύτης εἶναι. τοῦτο δ' ἐστὶν ὥσπερ ἐξ ὑποθέσεως· ὥσπερ γὰρ ἐπεὶ δεῖ σχίζειν τῷ πελέκει, ἀνάγκη σκληρὸν εἶναι, εἰ δὲ σκληρόν, χαλκοῦν ἢ σιδηροῦν, οὕτω καὶ ἐπεὶ τὸ σῶμα ὄργανον... ἀνάγκη ἄρα τοιονδὶ εἶναι καὶ ἐκ τοιωνδί, κτέ. The necessary condition is thus subsumed under the material cause.

416 a 19—b 11. In attempting to determine the nature of nutriment we are met by a difficulty. Some maintain that a thing is fed by its opposite, with the qualification that this holds not of all contraries but only of those which being quantities admit of increase, as do the elements [§ 9]. Others maintain that feeding, like growth, is a matter of addition and therefore that like is fed by like. The advocates of the former view object that like is impassive to like, for change will be to an intermediate state, when it is not to a contrary, and food in digestion undergoes a change. Further they urge that that which is nourished is not affected by the nutriment as the nutriment is affected and changed in the process of nutrition, appealing to the example of the craftsman and his material: if he is said to be affected by his material, what is meant is only that he changes from inactivity to activity [§ 10]. The truth is that all depends on what precisely is meant by "nutriment." Is it the food in its original state, bread, meat, etc.? Or is it that food after digestion? If the former, then it is true that "contrary is nourished by contrary"; if the latter, then "like is nourished by like." Thus, as the terms may reasonably be used in either way, both views of nutrition are, in a sense, correct [§ 11]. However, it must be remembered that nutriment, as such, of the living organism, is relative to the animate being [§ 12].

The main positions are admirably summarised in *Phys.* VIII. 7, 260 a 29 ἀδύνατον γὰρ αὔξησιν εἶναι ἀλλοιώσεως μὴ προϋπαρχούσης· τὸ γὰρ αὐξανόμενον ἔστι μὲν ὡς ὁμοίῳ αὐξάνεται, ἔστι δ' ὡς ἀνομοίῳ· τροφὴ γὰρ λέγεται τῷ ἐναντίῳ τὸ ἐναντίον. προσγίνεται δὲ πᾶν γινόμενον ὅμοιον ὁμοίῳ. ἀνάγκη οὖν ἀλλοίωσιν εἶναι τὴν εἰς τἀναντία μεταβολήν. ἀλλὰ μὴν εἴ γε ἀλλοιοῦται, δεῖ τι εἶναι τὸ ἀλλοιοῦν καὶ ποιοῦν ἐκ τοῦ δυνάμει θερμοῦ τὸ ἐνεργείᾳ θερμόν.

a 20. περὶ τροφῆς. Here we resume the main subject interrupted by the digression of §§ 3—8. Generation (γέννησις) having been dismissed at the end of § 2, 415 b 7, nutrition remains to be discussed.

a 21. τῷ ἔργῳ τούτῳ, the function of nutrition. **δοκεῖ.** This was a current opinion, but, as we see below, the opposite view also found support.

a 22. οὐ πᾶν δὲ παντί, int. τροφή ἐστι: white and black, for example, as well as health and sickness, would be exceptions.

a 23. γένεσιν ἐξ ἀλλήλων ἔχουσιν, i. q. a 24 γίνεται ἐξ ἀλλήλων. So ἔχειν διαφορὰν = διαφέρειν 416 b 4.

a 24. οὐ πάντα ποσά, int. *ἐστι.* Not all contraries are "quanta," and unless they are, they are incapable of increase.

a 25. οὐδ' ἐκεῖνα. By *ἐκεῖνα* are meant, not health and sickness, but the contraries which are supposed to derive growth from each other: a 24 *γίνεται γὰρ...*25 *κάμνοντος* are parenthetical. **τὸν αὐτὸν τρόπον.** The relation is not reciprocal. *A* may be *τροφὴ* to *B* (as oil to fire) without *B* being similarly (*τὸν αὐτὸν τρόπον*) *τροφὴ* to *A*.

a 26. ἀλλὰ τὸ μὲν ὕδωρ τῷ πυρὶ τροφή. Cf. *Metaph.* 983 b 22 *λαβὼν ἴσως τὴν ὑπόληψιν ταύτην ἐκ τοῦ πάντων ὁρᾶν τὴν τροφὴν ὑγρὰν οὖσαν καὶ αὐτὸ τὸ θερμὸν ἐκ τούτου γιγνόμενον καὶ τούτῳ ζῶν.* Here *τὸ θερμὸν* is nurtured by the water, but in other passages there is the same reference to water as nourishing, not animal heat as one is inclined to interpret it, but fire. *Mag. Mor.* II. 1210 a 16 *καὶ γὰρ εἰ θέλεις τὰ ἐναντιώτατα ποιῆσαι πῦρ καὶ ὕδωρ, ταῦτα ἀλλήλοις χρήσιμά εἰσιν. τὸ γὰρ πῦρ φασίν, ἐὰν μὴ ἔχῃ ὑγρόν, φθείρεσθαι, ὡς τοῦτ' αὐτῷ παρασκευάζον ὥσπερ τροφήν τινα, ταύτην δὲ τοσαύτην, ὅσης κρατήσειεν* <*ἄν*>· *ἂν μὲν γὰρ πλεῖον ποιήσῃς τὸ ὑγρόν, ἐπικρατῆσαν* <*ποιήσει*> *φθείρεσθαι τὸ πῦρ, ἐὰν δὲ σύμμετρον, συνοίσει.* Them. (51, 35 H., 95, 1 Sp.) refers to oil as a compound of water and air, both liquids. But Professor H. Jackson suggests that A. is thinking of how to keep a wood fire alight; you need some olive wood, not altogether dry. Philoponus (282, 9—11) says thoroughly dry wood will not keep a fire burning, any more than ashes.

a 27. ἐν μὲν οὖν τοῖς ἁπλοῖς. The particles *μὲν οὖν* are resumptive. The simple bodies are the four elements. It is implied that they are called "quanta" (*ποσά*), and the view that contrary is nutriment to contrary is more obviously true of them than of compounds. It may well be that A. is thinking primarily of the growth of tissues, which, relatively to the organs which they go to form, are simple. See *note* on 408 a 11. As the growth of organs is due to the growth of tissue, so the growth of tissue is due to the increase of the elements.

a 28. ταῦτ', i.e. the pair of correlative opposites. This is expanded into *τὸ μὲν...τὸ δέ,* one of the opposites being nourishment, the other that which is nourished.

a 30. τὸ ὅμοιον τῷ ὁμοίῳ. Empedocles attributed nourishment to the attraction of like for like. Sweet, bitter, acid and hot unite with what is kindred to them in animal or plant: *frag.* 62, 6; 90, 1 sq. D (253, 268 sq. K), Aet. *Plac.* V. 27 (*Doxogr. Gr.* p. 440, 4) *Ἐμπεδοκλῆς τρέφεσθαι μὲν τὰ ζῷα διὰ τὴν ὑπόστασιν τοῦ οἰκείου.* This was also the view of Democritus, if he included nutrition in his general view of action and passivity (cf. *De Gen. et Corr.* I. 7, 323 b 3 sqq.). While the majority agree in thinking that like is wholly unaffected by like, Democritus, A. there says, stood alone (*παρὰ τοὺς ἄλλους ἰδίως ἔλεξε μόνος*) in holding that what acts and what is acted upon are like and the same, for if two things are different and distinct, it is impossible that one should be acted upon by the other. **καθάπερ καὶ αὐξάνεσθαι.** No other argument is cited in support of the "like by like" view of nutrition. Its supporters would dwell upon the fact of increase in bulk, the presumption being that the added tissue is of similar nature.

a 31. ὥσπερ εἴπομεν, *supra* 416 a 21.

a 32. ὡς ἀπαθοῦς ὄντος. The view of Empedocles 410 a 23 (see *note*) and of Anaxagoras, who consistently extended it to knowledge and perception, as one particular case of action and being acted upon. See *notes* on 405 b 14, 15.

a 33. μεταβάλλειν. The verb is intransitive, as often. **ἡ δὲ μεταβολή.** Cf. *Metaph.* 1069 b 3 *ἡ δ' αἰσθητὴ οὐσία μεταβλητή. εἰ δ' ἡ μεταβολὴ ἐκ τῶν ἀντικει-*

μένων ἢ τῶν μεταξύ, ἀντικειμένων δὲ μὴ πάντων (οὐ λευκὸν γὰρ καὶ ἡ φωνή) ἀλλ' ἐκ τοῦ ἐναντίου, ἀνάγκη ὑπεῖναί τι τὸ μεταβάλλον εἰς τὴν ἐναντίωσιν· οὐ γὰρ τὰ ἐναντία μεταβάλλει, where the clause introduced by εἰ expresses A.'s own view. By change A. means motion in the widest sense, affecting the category of substance as well as those of quality, quantity and place. See *notes* on 405 b 31 and 406 a 12, τεσσάρων.

416 b 3. **τὸ τελευταῖον προσγινόμενον**, "the final thing added," that is, the thing added in its final state; cf. the use of τελευταία and προσεχής as epithets of ὕλη, when applied to the proximate matter as contrasted with matter in its primary state of pure potentiality (πρώτη ὕλη): *Metaph.* 1070 a 20 ἅπαντα γὰρ ὕλη ἐστί, καὶ τῆς μάλιστ' οὐσίας ἡ τελευταία [int. ὕλη].

b 4. **εἰ δ' ἄμφω**, i.e. εἰ ἄμφω ἐστὶν ἡ τροφή. **ἡ μὲν ἄπεπτος ἡ δὲ πεπεμμένη.** The former is πρώτη τροφή, the latter τελευταία.

b 8. **ὀρθῶς καὶ οὐκ ὀρθῶς.** So 417 a 18 sq., *De Gen. et Corr.* I. 5, 322 a 3 ἔστι μὲν γὰρ ὡς τὸ ὅμοιον ὁμοίῳ αὐξάνεται, ἔστι δ' ὡς ἀνομοίῳ. The formula recurs in a different connexion, 426 a 22 sq.

b 9. **οὐθὲν τρέφεται μὴ μετέχον ζωῆς.** Cf. *note* on 413 a 29. It follows from this that it is only in a figurative sense that fire can be said to be fed with fuel.

b 11. **καὶ οὐ κατὰ συμβεβηκός.** An animal is nourished *quâ* living, not *quâ* white or black, nor in virtue of any other non-essential qualities that it may possess, just as a servant is properly and essentially the servant of a master and not, except incidentally, the servant of a white man, an old man, a grammarian, or indeed a man at all. Cf. Them. 52, 31 sqq. H., 96, 19 sqq. Sp., Simpl. 114, 36 sqq., Philop. 285, 6—18.

416 b 11—31. The two notions of nutrition and growth can be thus distinguished. Growth is a quantitative conception. Nutrition is of the animal or plant regarded as a concrete individual thing; for it is nourishment which preserves it in being [§ 13]. And thus we have determined the function and the correlative object of the nutritive faculty [§ 14]. The end which this nutritive or rudimentary soul subserves is the propagation of the species and it may therefore be called the generative soul [§ 15]. In the nourishment of the animal or plant the soul makes use of (*a*) internal heat, (*b*) food, just as in steering a boat the steersman uses (*a*) his hand and (*b*) the rudder. The internal heat is necessary for the digestion and assimilation of food [§ 16].

b 12. **τροφῇ**, int. εἶναι, which is expressed with the second dative (αὐξητικῷ) only, as in *Metaph.* 1043 b 2 sq. In 408 a 25 sq. and 413 b 29 it is expressed with the first dative and not with the second.

b 12. **αὐξητικῷ εἶναι.** Cf. *supra* 412 b 13. For the relation of these two notions compared see *De Gen. et Corr.* I. 5, 322 a 25 καὶ ἡ τροφὴ τῇ αὐξήσει τὸ αὐτὸ μέν, τὸ δ' εἶναι ἄλλο. ᾗ μὲν γάρ ἐστι τὸ προσιὸν δυνάμει ποσὴ σάρξ, ταύτῃ μὲν αὐξητικὸν σαρκός, ᾗ δὲ μόνον δυνάμει σάρξ, τροφή. For the omission of the article τὸ with the infinitive see *note* on 413 b 29. **ᾗ μὲν γὰρ...13 αὐξητικόν.** The subject of 13 αὐξητικόν (as of τροφή) is left unexpressed, the construction being emphatically *ad sensum*: it must be the food assimilated. In so far as this maintains the bodily structure by repairing waste and conducing to vital functions, it is said merely to nourish it, and this it will do in old age, when the bulk of the body is shrinking instead of increasing; in so far as it increases the bulk and volume of the body, as happens in the years of growth, it is not only τροφή but αὐξητικόν. Not only is the animal economy maintained, but there is a surplus which, as we say, builds it up and adds to its bulk. Cf. the similar passage *De Gen. et Corr.* I. 5, 322 a 16—33.

b 13. τόδε τι καὶ οὐσία. For *οὐσία* in the sense of *τόδε τι* (*καὶ* being explicative) see 412 a 7 and *note*.

b 15. καὶ γενέσεως ποιητικόν. Cf. Them. (53, 4 H., 97, 3 Sp.) *ὅταν δὲ ἤδη εἰς ἀκμὴν ἔλθῃ τὸ ἔμψυχον σῶμα, τοῦ μὲν αὔξειν παύεται ἡ τροφή, τοῦ τρέφειν δὲ οὐδαμῶς, ἀλλ' ἤδη ποιεῖ καὶ γεννητικόν* [*τοῦ ὁμοίου γάρ*]· *τὸ γὰρ σπέρμα περίττωμα ἦν τῆς ἐσχάτης τροφῆς* [i.e. the blood or its analogue. Cf. *De Gen. An.* I., cc. 17—20, especially 726 b 1—11]. *γίνεται οὖν τηνικαῦτα καὶ γενέσεως αἰτία τροφή.* The intimate relation between nutrition and reproduction and the diversion of superfluous nourishment to the development of new individuals is most clearly seen in the lowest forms of life. Barco, p. 20, *note*, cites Dante (*Purg.* XXV. 37) and supposes the poet indebted to the commentary of Thomas Aquinas on this passage. **ἀλλ' οἷον τὸ τρεφόμενον,** int. *ἀλλὰ τοιούτου οἷόν ἐστι τὸ τρεφόμενον.* Cf. 415 a 28, b 7 and 416 b 25 *infra*.

b 17. ἡ μὲν τοιαύτη τῆς ψυχῆς ἀρχή, i.e. the nutritive principle or faculty as above defined: the possessive genitive (as with *δύναμις* or *μόριον*).

b 18. τὸ ἔχον αὐτήν, i.e. *τὸ ἔχον τὴν τοιαύτην...ἀρχήν.* By *τὸ ἔχον* is meant b 9 *τὸ ἔμψυχον σῶμα ᾗ ἔμψυχον* (cf. b 11—13), or *τὸ ἔμψυχον ζῷον.* See *note* on 403 a 4. By **ᾗ τοιοῦτον** I understand *ᾗ τόδε τι καὶ οὐσία* (b 13). The *θρεπτικὴ δύναμις* maintains its possessor in existence as *τόδε τι καὶ οὐσία* all through life, whether its growth is increased as in youth, or diminished as in age, as a numerical unity through all the changes of material assimilated. Trend.[2]: Nutriendo id subest, ut corporis particulae et pereant et nascantur novae. Non igitur corpus servatur unum et idem numero, sed genere et natura. It seems to me that, if *ᾗ τοιοῦτον* meant simply *ᾗ ἔχον αὐτήν*, the functions of nutrition and growth would be confused.

b 19. ἐνεργεῖν, i.e. to be an active and operative organism, as contrasted with one which is dormant.

b 21. ἡ πρώτη ψυχή. Not the first soul as of several, but the rudimentary soul, soul at its lowest stage, that is to say, the nutritive principle.

b 22. τὸ ἔχον ταύτην σῶμα. Cf. *supra* b 18.

b 23. ἐπεὶ δὲ ἀπὸ τοῦ τέλους. Torstrik advocated the transposition of the sentence *ἐπεὶ δὲ...25 οἷον αὐτὸ* to follow **δύναται εἶναι** of b 20. By so doing he makes the reference of *ἔστι δὲ ᾧ τρέφεται διττὸν* to b 22 *ᾧ δὲ τρέφεται, ἡ τροφὴ* more direct and perspicuous. See, however, *note* on 414 b 10. As there, so here, the sequence of thought is momentarily interrupted.

b 24. τέλος δέ, int. *τῆς πρώτης ψυχῆς.*

b 25. γεννητικὴ οἷον, int. *γεννητικὴ τοιούτου οἷον.*

b 26. διττόν. This statement is apparently intended as an amendment of the previous account. Not only nutriment, but vital heat, has a title to be called the means or instrument of nutrition (*ᾧ τρέφεται*). **ὥσπερ καὶ ᾧ κυβερνᾷ.** The illustration is perfectly clear. The steersman guides the ship with the rudder, but he sets the rudder in motion with his hand. The rudder is a part of the ship and is merely set in motion (for no account is or need be taken of the displacement of the water or of the motion of the ship, which would be due to wind). The hand which moves the rudder is itself moved by the steersman. Thus the steersman is himself the source of motion, the prime movent of the system, and as such relatively, though not absolutely, unmoved. This is quite in accordance with A.'s theory of motion, in order to account for which he postulates, as we shall be told in 433 b 13—15, (1) a prime movent, itself unmoved, (2) an agent for the transmission of motion, moved by the prime movent and in turn setting in motion (3) the instrument proper, which is merely moved and is not a cause of motion.

b 27. **τὸ μὲν κινοῦν καὶ κινούμενον, τὸ δὲ κινούμενον <μόνον>.** Thanks to the commentary of Philop., the application of the example is also clear. Like the hand of the pilot, the vital heat (*τὸ ἔμφυτον θερμὸν* Them., Philop.) is the intermediary in nutrition, itself set in motion by the nutritive soul and in turn acting upon the food (*τροφή*): while the latter, like the rudder in the illustration, is merely passive, undergoing transmutation in the process of digestion. The ancient commentators from Alex. Aphr. downwards, with the single exception of Philop., were misled by the erroneous reading *κινοῦν*, presented by all our MSS. except E. With misplaced ingenuity Alexander endeavoured to get a good sense out of his text by making the nutritive faculty itself answer to the pilot's hand and the vital heat to the rudder, both being instruments. The nutritive faculty, though movent, is itself unmoved, the vital heat has the intermediary position, moving and moved, which is correct enough, but food is ousted from being an instrument of nutrition at all, which flatly contradicts A.'s explicit statement in 416 b 22 sq. Alex. Aphr., foreseeing this, sets out by boldly denying that either of the two meanings of *ᾧ τρέφεται* in 416 b 25 applies to food. The words of Philop. (288, 5) are *λέγει δὲ ὁ Ἀλέξανδρος καὶ ἄλλην ἐξήγησιν· τὸ γὰρ ᾧ τρέφει τὸ διττὸν οὐκ ἐπὶ τῆς τροφῆς ληπτέον, φησί, νῦν, ἀλλὰ διττὸν λέγει τὴν θρεπτικὴν ψυχὴν καὶ τὸ ἔμφυτον θερμόν, ὧν τὸ μέν ἐστιν ἀκίνητον ἡ θρεπτικὴ δύναμις (αὕτη γὰρ οὐ κινουμένη κινεῖ), τὸ δὲ ἔμφυτον θερμὸν κινοῦν καὶ κινούμενον· κινεῖ μὲν γὰρ τὴν τροφήν, κινεῖται δὲ ὑπὸ τῆς δυνάμεως. ἡ δὲ ἐξήγησις αὕτη ἁρμόζοι ἂν πρὸς γραφὴν τὴν φερομένην οὕτως τὸ μὲν κινοῦν καὶ κινούμενον, τὸ δὲ κινοῦν μόνον, δηλονότι αὐτὸ μὴ κινούμενον.* Them. (53, 26 sqq. H., 98, 5 sqq. Sp.) in the main agrees with Alexander. Simpl. (115, 30 sqq.) scruples to regard the nutritive soul as one of the instruments of nutrition (*ᾧ τρέφεται*) and rightly makes food and vital heat the two things signified (*διττόν*). But, with the false reading *κινοῦν* before him, he is driven to reverse the rightful relation of these instruments as media, making vital heat *τὸ κινοῦν* and food *τὸ κινοῦν καὶ κινούμενον*. Vital heat acts upon food, but food does not react upon vital heat, which is therefore in this sense only, but not absolutely, *κινοῦν μόνον*. In the process of digestion vital heat takes an active part, food a passive part; yet, in so far as it acts upon the body by increasing its bulk, even food is movent as well as moved. Cf. Zeller in *Archiv f. d. Gesch. d. Ph.* IX., p. 537 sq.

b 28. **ἐργάζεται δὲ τὴν πέψιν τὸ θερμόν.** Cf. *De Gen. An.* II. 4, 740 b 26 sq., *De Part. An.* II. 7, 652 b 9 *τούτου δ' αἴτιον ὅτι τοῖς τῆς ψυχῆς ἔργοις ὑπηρετικώτατον τῶν σωμάτων τὸ θερμόν ἐστιν*: cf. also *De Resp.* 21, 480 a 16; 18, 479 a 29.

b 31. **ἐν τοῖς οἰκείοις.** A. would seem to have written a separate treatise *περὶ αὐξήσεως καὶ τροφῆς* (or simply *περὶ τροφῆς*), to judge by the citation in *De Somno* 3, 456 b 2 *τῆς μὲν οὖν θύραθεν τροφῆς εἰσιούσης εἰς τοὺς δεκτικοὺς τόπους γίνεται ἡ ἀναθυμίασις εἰς τὰς φλέβας, ἐκεῖ δὲ μεταβάλλουσα ἐξαιματοῦται καὶ πορεύεται ἐπὶ τὴν ἀρχήν. εἴρηται δὲ περὶ τούτων ἐν τοῖς περὶ τροφῆς.* But all trace of this treatise is lost. See Trend., p. 131, *Ind. Ar.* 104 b 16—28.

CHAPTER V.

With c. 4 we take leave of nutritive soul. The next higher stage is the faculty of sense, which is the main subject from this point right on to Book III., c. 2, the discussion of *φαντασία* in III., c. 3 being a sort of appendix to it.

At first sight we seem to make little progress in this chapter by the barren discussion of the terms "potential" and "actual," applied in turn to *αἰσθητικόν*, *αἰσθάνεσθαι* and *αἴσθησις*. In reality the questions are of far-reaching import

and materially affect our conception of sense, and consequently of thought. When we call sensation an affection, πάθος, or a movement, κίνησις, we must always remember that the affection and the movement belong to the composite substance of the individual percipient and are shared in by body and soul. Affections and movements of the body present no difficulty, but what do these terms mean when applied to the soul? Consider the analogous case of acquiring knowledge. There we find one transition from sheer ignorance by learning, and another from the possession to the exercise of knowledge already acquired, and these are mental changes. Sensation implies similar transitions, and, when these are regarded abstractly, apart from the bodily processes accompanying them, the real nature of such changes or transitions becomes clear. They are no alterations for the worse, impairing and destroying; they tend to preserve, develop and perfect the sentient being, which is thus enabled to realise itself in act. In short, sensation is *alteratio non corruptiva, sed perfectiva*, an ἐνέργεια, and not properly speaking an ἀλλοίωσις or κίνησις, though the use of these terms in reference to it can hardly be avoided. What this means for sensation will not be fully realised until we reach II., c. 12 and III., c. 2, more especially 426 b 8—427 b 16. The present chapter forms the subject of a valuable essay by Alex. Aphr. in ἀπ. καὶ λύσ. III. 3, pp. 82—86.

416 b 32—417 a 14. To come to sense-perception in general. It consists in being acted upon or moved. For, as already remarked, a sensation is a certain change of quality or alteration [§ 1]. It may be asked why external objects are indispensable to sense-perception and why there is no sensation of the senses, i.e. the sense-organs, themselves, if earth, water and the other elements of external things are actually present in our sense-organs. We reply that the perceptive faculty exists potentially and not actually. Take as an example fuel, which will not burn of itself, but needs something to make it burn. Similarly the faculty of sense needs external objects to stimulate it into activity. We must distinguish two meanings of (*a*) perceiving and therefore of (*b*) perception, according as they are potentially so or actually so [§ 2].

416 b 32. **κοινῇ.** A general survey of sense introductory to the separate treatment of the several senses in cc. 7—11.

b 33. **ἐν τῷ κινεῖσθαί τε καὶ πάσχειν.** Cf. 434 b 28 sq.

b 34. **καθάπερ εἴρηται,** i.e. *supra* 415 b 24 ἡ μὲν γὰρ αἴσθησις ἀλλοίωσίς τις εἶναι δοκεῖ: cf. 410 a 25.

b 35. **φασὶ δέ τινες.** Democritus and Empedocles, although the latter is inconsistent; see *notes* on 405 b 15, 410 a 23 sqq., 416 a 30.

417 a 1. **ἐν τοῖς καθόλου λόγοις,** that is, *De Gen. et Corr.* I. 7, 323 b 18 sqq.: see the citation in *note* on 407 b 19, also *notes* on 405 b 14, 410 a 23. A reference in the same form occurs in *De Gen. An.* IV. 3, 768 b 23 ἐν τοῖς περὶ τοῦ ποιεῖν καὶ πάσχειν διωρισμένοις.

a 2. **ἔχει δ' ἀπορίαν.** Our problem is this. If sense is a faculty of apprehending sensibles, and the sense-organs themselves are sensibles, how is it that sense does not have perception of its own organs quite apart from the presence of any external objects, especially as these sense-organs consist of the elements, which are objects of sense? The solution (which we will here anticipate) is to the effect that the sense-faculty has only a potential existence, and, like everything which exists potentially, is called into actuality by something else which already has actual existence; in this case, the external object. This problem is not, as at first sight might appear, altogether without a bearing upon the theory of sense-perception as modification or qualitative change (ἀλλοίωσις). For, if the faculty of sense is potentially what the sensible object is actually, and if the

presence of the sensible calls the faculty into proper actual existence, this change may fitly be described as an action of the object upon a passive faculty, and so justifies the remark that sense-perception consists in being moved, that is, in being acted upon. But we shall see that the action of the external on the passive faculty is not the last word or the final account of the matter.

a 3. τῶν αἰσθήσεων, i.e. the sense-organs, usually called *αἰσθητήρια*. A. is generally careful to distinguish the two, but sometimes, especially in the plural, the one word (*αἴσθησις*) is used in place of the other, as with the English "sense," "senses." Cf. *De Part. An.* IV. 10, 686 a 8 *ἐξέθετο δ' ἡ φύσις ἐν αὐτῇ καὶ τῶν αἰσθήσεων ἐνίας*, *De Sensu* 3, 440 a 19, *Prob.* XXXI. 12, 958 b 16. Similarly *ὄψις, ἀκοή, ὄσφρησις* are used for eye, ear and nostril respectively, e.g. 423 b 18, and probably *γεῦσις* for the tongue 422 a 31, 33. Cf. 435 b 2, *note* on *τοῦτο τὸ αἰσθητήριον*. **καὶ διὰ τί**: *καὶ* explicative, "or, in other words, why."

a 4. οὐ ποιοῦσιν. The subject to the verb is *αἱ αἰσθήσεις*, the "sense-organs." The sense-organs, e.g. the eyes, are compounded of the elements, and these elements and their properties are perceived by sense. The qualification "or their properties" is introduced because sometimes the element itself (e.g. air) cannot be directly perceived, but only its qualities (e.g. temperature and perhaps transparency, *τὸ διαφανές*). **ποιοῦσιν αἴσθησιν**, produce actual sensation as objects perceived. *Ind. Ar.* 20 b 55 *ποιεῖν τὴν αἴσθησιν* et *τὰ αἰσθητήρια* et *τὰ αἰσθητὰ* dicuntur. But, apart from the present instance where the sense-organs are *ex hypothesi αἰσθητά*, I do not remember any passage in *De A.* in which *ποιεῖν αἴσθησιν* is used of a sense-organ. Bonitz himself cites *De Part. An.* IV. 11, 690 b 30 *ἡ μὲν γὰρ γλῶττα τῶν χυμῶν ποιεῖ τὴν αἴσθησιν*. See *note* on 419 a 26.

a 5. καθ' αὑτὰ ἢ τὰ συμβεβηκότα τούτοις. We must understand *κατὰ* to govern *τὰ συμβεβηκότα*. As explained in the *notes* on 406 a 4, 5, the element in itself is opposed to its accidents. As from II., c. 6 it appears that qualities or attributes are *αἰσθητὰ* proper, we must interpret perception of the elements in themselves to mean perception of their essential qualities and refer *τὰ συμβεβηκότα τούτοις* to the non-essential or properly accidental qualities. The former, hot, cold, dry, moist, are perceived by touch (cf. 414 b 8 sq., 423 b 27 sq.), the latter, colour, sound, odour, by the other senses: Philop. 295, 3—8, Simpl. 118, 23 *τῶν γὰρ στοιχείων ἐστὶν ἡ αἴσθησις ἢ κατὰ τὰ καθ' αὑτὰ αὐτοῖς ὑπάρχοντα ἢ κατὰ τὰ ἄλλως αὐτοῖς συμβεβηκότα. καὶ γὰρ τῆς ἀντιτυπίας αἰσθανόμεθα τῆς γῆς καθ' αὑτὸ αὐτῇ συμβεβηκυίας, καὶ τοῦ ὁποιονοῦν αὐτῆς χρώματός τε καὶ μεγέθους*, Soph. 63, 33—35. The grammatical note of Philop. (295, 8—12) makes no sense as it stands, but if by a slight emendation we read (l. 9) *τῶν καθ' αὑτὰ* for *καθ' αὑτῶν*, his view of the construction will agree with that of Soph. (63, 33) *ὧν...καὶ τῶν καθ' αὑτὸ προσόντων...καὶ τῶν κατὰ συμβεβηκός*, according to which *καθ' αὑτὰ* stands for *τῶν καθ' αὑτὰ* and *τὰ συμβεβηκότα* for *τῶν συμβεβηκότων*. In neither of these two ways do the sense-organs perceive the substances of which they are themselves severally composed, always provided that flesh is regarded not as an organ, but as an intra-organic medium.

a 6. δῆλον οὖν. These words introduce the obvious, because the only possible, explanation. If the faculty existed actually, like the sense-organs, the one would act upon the other even in the absence of external objects.

a 7. διό. To complete the sense we must before *καθάπερ* supply *τὸ αἰσθητικόν ἐστι* or at least *οὕτως ἔχει*. See *note* on 403 a 12 *καθάπερ τῷ εὐθεῖ*.

a 9. ἐντελεχείᾳ: to be taken closely with *ὄντος*, "fire actually existent," that is, "fire operant." Cf. 403 b 25, first *note*.

a 10. λέγομεν διχῶς. We say of a man who is not blind and not deaf, that he sees and hears, even though at the moment he is asleep. Hence the two meanings of "perceive" (*αἰσθάνεσθαι*) to be distinguished are (1) "to perceive potentially," i.e. to have the capacity of perception, (2) "to perceive actually," i.e. to be engaged in perception at the moment. This tedious discussion could have been shortened, if A. had two simple technical terms, one for the implicit and another for the explicit stage of actuality; cf. 412 a 10 sq., 22—26. That he has no such pair of terms either for actuality or for the corresponding potentiality is plain from the first sentence of § 7 of this chapter (417 b 29 sqq.), where the two stages of potentiality are cumbrously expressed by "the sense in which a boy, and the sense in which a grown man, may be said to be potentially or in potency a general."

a 12. ἡ αἴσθησις. Etymologically the noun in *-σις* should denote an act, "perceiving" (cf. *βάδισις*, walking) fully as much as the infinitive. But cf. 417 a 3 and see *note* on *εἴδησις*, 402 a 1.

a 13 ὁμοίως δὲ καὶ τὸ αἰσθάνεσθαι...14 ἐνεργείᾳ. This is a strange piece of carelessness. The double meaning of *αἴσθησις* has just been inferred from the double meaning of *αἰσθάνεσθαι* (*ἐπειδὴ δὲ τὸ αἰσθάνεσθαι λέγομεν διχῶς,...διχῶς ἂν λέγοιτο καὶ ἡ αἴσθησις*). Now apparently the double meaning of *αἰσθάνεσθαι* is adduced as similar to that of *αἴσθησις*. Cf. 423 b 17—20. Torstrik proposed to replace *τὸ αἰσθάνεσθαι* by *τὸ αἰσθητόν*, which gives unexceptionable sense and may be thought to be confirmed by Alex. *ἀπ. καὶ λύσ.* III. 3, 83, 4 *λαβὼν δὲ τὸ διχῶς λέγεσθαι τὸ αἰσθάνεσθαι...ἔλαβεν τὸ τῆς αἰσθήσεως τὴν μὲν εἶναι δυνάμει τὴν δὲ ἐνεργείᾳ, ὁμοίως δὲ καὶ τὸ αἰσθητόν.* However, the mention of the double meaning of *αἰσθητὸν* here would anticipate the distinction drawn in c. 6, where there is no cross reference, and M. Rodier while adopting *αἰσθητὸν* encloses the whole sentence in square brackets as a marginal note which has crept into the text. I prefer to retain the MS. reading, but I cannot help suspecting that, if A. had revised the treatise for publication, he would have made some alteration here, as well as in numerous other passages: cf. 415 b 2 and *note*.

417 a 14—20. A preliminary note on action and passivity. Let us proceed on the assumption that to be acted upon and to be moved are identical with being actively operant, motion having been defined in the *Physics* as an active operation of a kind and yet incomplete. Hence wherever there is passivity or motion there must be some agent which is actively operant, and agent and patient are dissimilar before, but assimilated after, the one has acted upon the other [§ 3].

a 15. τοῦ πάσχειν καὶ τοῦ κινεῖσθαι καὶ τοῦ ἐνεργεῖν: we shall assume provisionally that, when the faculty actively operates, it is acted upon and set in motion (*κινεῖται*), that is, we return to the position of 416 b 33 *ἡ δ' αἴσθησις ἐν τῷ κινεῖσθαί τε καὶ πάσχειν συμβαίνει*, with the qualification that by *αἴσθησις* is now meant *ἡ κατ' ἐνέργειαν αἴσθησις.* That the assumption aforesaid is not without justification when we examine the general conceptions of motion, being acted upon, and active operation, without any restriction to the particular case of sensation, is clear from the following clause.

a 16 ἐνέργειά τις...17 εἴρηται. The same view of motion is presented 431 a 6 sq. and in a well-known passage of *Eth. Nic.* 1174 a 19 "every motion requires time and implies an end," *ἐν χρόνῳ γὰρ πᾶσα κίνησις καὶ τέλους τινός* [int. *ἐστίν*]: this end it seeks to attain and is incomplete until it has attained it, "e.g. the motion or process of building is complete when the required structure is made—either in the whole time therefore, or in this final moment of it. But in the several portions of this time all the motions are incomplete, and specifically

different from the whole motion and from each other; the fitting together of the stones is different from the fluting of the pillar, and both from the building of the temple. The building of the temple is complete; nothing more is required for the execution of the plan. But the building of the foundation and of the triglyph are incomplete; for each is the building of a part only. These motions, then, are specifically different from one another, and it is impossible to find a motion whose nature is complete at any moment—it is complete, if at all, only in the whole time" (Peters' Trans.). If instead of a popular treatise like *Eth. Nic.*, we turn to the more exact treatment of the subject in the *Physics*, the definition of motion there given is (*Phys.* III. 1, 201 a 10) *ἡ τοῦ δύναμει ὄντος ἐντελέχεια ᾗ τοιοῦτον* (int. *κινητόν*), but that motion is incomplete is recognised 201 b 31 *ἡ κίνησις ἐνέργεια μέν τις εἶναι δοκεῖ, ἀτελὴς δέ*, the reason being *ὅτι ἀτελὲς τὸ δυνατόν, οὗ ἐστὶν ἡ ἐνέργεια.* In *Metaph.* 1048 b 28 A. says: All motion is incomplete (*ἀτελής*) as growing, learning, walking, building. These, being motions, are incomplete (*αὗται δὲ κινήσεις, καὶ ἀτελεῖς γε*). To take a walk and to have finished walking at the same moment are incompatible, as are to be building and to have built, to become and to have become, to be moving and to have moved at the same moment: whereas with energies it is different; the act of sight as of thought is indivisible and independent of time: b 33 *ἑώρακε δὲ καὶ ὁρᾷ ἅμα τὸ αὐτό, καὶ νοεῖ καὶ νενόηκεν.*

a 17. πάσχει. See *note* on 407 b 19. **καὶ κινεῖται.** When the result produced by *τὸ ποιοῦν* is *ἀλλοίωσις*, this is one of the species of *κίνησις*, viz. *κίνησις κατὰ τὸ ποιόν, κατὰ πάθος.* See 405 b 31, 406 a 12 sq. and *notes*: also cf. 434 b 29—435 a 5.

a 18. ὑπὸ τοῦ ποιητικοῦ. Cf. *De Gen. et Corr.* I. 7, 324 b 13 *ἔστι δὲ τὸ ποιητικὸν αἴτιον ὡς ὅθεν ἡ ἀρχὴ τῆς κινήσεως.* **ἐνεργείᾳ ὄντος.** The fire which kindles the fuel is actually hot; the fuel can be made hot, and so is potentially hot, even if it has in it cold, the privation of heat; but it will never kindle itself, a 7—9 *supra.* Thus *τὸ πάσχον* is *δυνάμει ποιόν τι*, but *τὸ ποιοῦν* must be *ἐνεργείᾳ ποιόν τι*, and the *ποιότης* in question constitutes the point of similarity, being present actually in the agent and potentially in the patient. We may remark *en passant* that for motion in the widest sense, and primarily of spatial motion, the conclusion also holds that the ultimate cause of motion must be actual, never potential, *Metaph.* Λ., c. 6, especially 1071 b 12—32 and 1072 a 2—7.

a 18. ὑπὸ τοῦ ὁμοίου. The conclusion is perfectly general, with the qualification mentioned below 417 b 4 sq.; cf. *De Gen. et Corr.* I. 7, 323 b 31 *ἀνάγκη καὶ τὸ ποιοῦν καὶ τὸ πάσχον τῷ γένει μὲν ὅμοιον εἶναι καὶ ταὐτό.* It holds in sensation because, as we shall see, the sensible object is in actuality what the faculty of sense is only potentially: this constitutes the similarity. Cf. 429 b 29—31.

a 19. ὑπὸ τοῦ ἀνομοίου. The sensible object, as it actually is, and the faculty of sense before perception, are dissimilar. This constitutes the dissimilarity. It is in perception that they are assimilated and the faculty becomes what the object already is; cf. *De Gen. et Corr.* I. 7, 323 b 24 *τό τε παντελῶς ἕτερον καὶ τὸ μηθαμῇ ταὐτὸν ὡσαύτως* [int. *εὔλογον μὴ πάσχειν*]· *οὐδὲν γὰρ ἂν πάθοι λευκότης ὑπὸ γραμμῆς ἢ γραμμὴ ὑπὸ λευκότητος.* **καθάπερ εἴπομεν.** Apparently in the discussion of nutrition, the first case of being acted upon to arise, 416 a 29—b 9. Or A. may mean no more than to reiterate the reference to *De Gen. et Corr.* I. 7, given above 417 a 1. This is somewhat less probable.

a 20. πάσχει...ὅμοιόν ἐστιν. Compare the parallel version in 418 a 5 sq. Some such formula is repeated *mutatis mutandis* in the chapters on the several senses, e.g. 422 a 7, b 15 sq., 423 b 31.

417 a 21—418 a 6. The meaning of the term potential is extended to include racial capacity as well as the capacity which comes when a habit is acquired. Thus in the possession of knowledge we distinguish (1) the stage when the individual has the capacity implied in his belonging to a given species, (2) the stage when the individual has acquired the knowledge, say, of the rules of grammar. At both these stages he is potentially possessed of knowledge. Again, (3) there is the further stage when he puts his knowledge into application [§ 4]. By a similar extension of meaning passivity or to be acted upon comes to include the transition from potentiality to actuality, whereby a thing realises its true nature, and this change is preservation, not destructive alteration; or if an alteration at all, is an alteration in a new sense of the term [§ 5]. When, therefore, the faculty of sense is declared to be potential, this term must be understood to include both the stage reached at birth and the subsequent growth of the faculty by the presentment of external objects; and here lies the difference between sense-perception and knowledge. The objects of knowledge, being universals, are in a manner in the soul itself, while to sense the stimulus of an external object is indispensable [§ 6]. Allowance being made for these distinctions which pass unrecognised in language, the general rule holds that the faculty of sense-perception is potentially what the object of sense is actually. In perception the faculty becomes assimilated to and one in quality with its object [§ 7].

The distinction between two stages of potentiality is laid down *Phys.* VIII. 4, 255 a 30—b 5. If we compare 412 a 10 sq., 22 sqq., where knowledge as potence is opposed to its exercise in act, we see that here A. introduces an intermediate step, knowledge as habit, *ἕξις*, which is act if contrasted with potence, but potence if contrasted with act. Thus it does double duty, the three stages being really four. Cf. what is said of *νοῦς ἐν ἕξει* 429 b 5—9.

417 a 21. διαιρετέον. The word is frequently used in the sense of drawing distinctions or analysing a thing. See *note* on 402 a 23 **διελεῖν** and cf. 429 b 30. Cf. also *Metaph.* 1048 a 27.

a 21. νῦν γὰρ ἁπλῶς. By *νῦν* is meant "in the present discussion regarded as incomplete." Ἁπλῶς with *λέγεσθαι* or *σημαίνειν* properly means "in a single sense" as opposed to two (*διχῶς*) or more or several senses (*πλεοναχῶς*) in which a term is used. But when opposed to *ὡρισμένως* it means, like *ἀδιορίστως*, "vaguely, without distinction": e.g. *Top.* VIII. 5, 159 a 38 *ἀνάγκη δὴ τὸν ἀποκρινόμενον ὑπέχειν λόγον θέμενον ἤτοι ἔνδοξον ἢ ἄδοξον θέσιν ἢ μηδέτερον, καὶ ἤτοι ἁπλῶς ἔνδοξον ἢ ἄδοξον ἢ ὡρισμένως* and *Metaph.* 1020 b 32 *λέγεται δὲ τὰ μὲν πρῶτα κατ' ἀριθμὸν ἢ ἁπλῶς ἢ ὡρισμένως πρὸς αὐτοὺς ἢ πρὸς ἕν, οἷον τὸ μὲν διπλάσιον πρὸς ἓν ἀριθμὸς ὡρισμένος.* In these passages, as here, it means "without qualification, vaguely, indefinitely."

a 22. περὶ αὐτῶν, int. *περὶ δυνάμεως καὶ ἐντελεχείας.* In 417 a 7 we declared *τὸ αἰσθητικὸν* to be *δυνάμει μόνον* and 417 a 14—21 general statements were made about *ἐνεργεῖν* and *ἐνέργεια*, in both cases without qualification. In what follows two senses of *δύναμις* are distinguished. In 417 b 2 sqq. the meaning of *πάσχειν* which also appeared in 417 a 15 is further enlarged.

a 24. τῶν ἐπιστημόνων, int. *ἐστί.* This means that without the capacity to learn and so become *ἐπιστήμων* man would not be man.

a 25. ἤδη. We at once pronounce him possessed of knowledge without requiring that any further condition should be fulfilled; cf. *Pol.* 1275 b 18 *ᾧ γὰρ ἐξουσία κοινωνεῖν ἀρχῆς βουλευτικῆς ἢ κριτικῆς, πολίτην ἤδη λέγομεν εἶναι ταύτης τῆς πόλεως.* Cf. 412 a 8.

a 27. τὸ γένος τοιοῦτον καὶ ἡ ὕλη. Cf. 417 a 23 sq. and *Metaph.* 1022 b 25 *ἡ αὐτ[illegible] τὸ γένος*, whence we infer that *τὸ γένος* = the race or species to which

the individual belongs by birth. With *τοιοῦτον* supply *οἷον ἐπίστασθαι* or *οἷον δυνατὸν εἶναι ἐπίστασθαι*. Thus *τοιοῦτον=δεκτικὸν τῆς ἐπιστήμης*: cf. Alex. Aphr. *ἀπ. καὶ λύσ.* 83, 20 *τὸ φύσιν ἔχον δέξασθαι ἐπιστήμην*, 83, 28 *ὁ κατὰ τὸ πεφυκέναι* [int. *λεγόμενος δυνάμει ἐπίστασθαι*], Them. 55, 21 H., 101, 14 Sp. The next words present difficulty, for *καὶ* may be merely explanatory or may introduce a further reason. In the latter case *ἡ ὕλη* cannot mean, as St Hilaire seemed to think, the material substratum in the composition of the individual; moreover, there seems hardly any reason why difference of matter as giving rise to different capacities should be mentioned in this context. Probably therefore we should take *ἡ ὕλη* as summing up the latent capacities of the species and not therefore really very different from *τὸ γένος*, because the capabilities of the race, that is, the latent capabilities of the individual, are such as to render him capable of knowledge. Them. (*loc. cit.*) paraphrases *ὅτι τὸ γένος τοιοῦτον καὶ ἡ φύσις ἡ τοῦ ἀνθρώπου, ὡς εἶναι δεκτικὴ ἐπιστήμης*: cf. Philop. 299, 27 *ὁ γὰρ ἄνθρωπος κοινῶς ἐπιστήμων λέγεται, ὅτι ἡ φύσις ἡ τοῦ ἀνθρώπου ἐπιστήμης δεκτική ἐστι· τοῦτο γὰρ αὐτῷ σημαίνει τὸ* **γένος καὶ ἡ ὕλη**, *ἀντὶ τοῦ ἡ φύσις αὐτὴ τοῦ ἀνθρώπου καὶ αὐτὸ τὸ ὑποκείμενον· γένος γὰρ λέγει καὶ τὸ ὑποκείμενον. κατὰ τοῦτο τὸ σημαινόμενον καὶ τὴν ὕλην ἔφαμεν δυνάμει* [412 a 9, where Philop. reads *δυνάμει*]· *πᾶσα γὰρ ὕλη δυνάμει ἐστὶν ἐκεῖνο οὗ ἔστιν ὕλη, τῷ δύνασθαι δέξασθαι αὐτό.* Simpl. 121, 17, after explaining *δυνάμει ἐπιστήμων* by *ὡς πεφυκὼς γίνεσθαι διὰ μαθήσεως*, continues *καὶ τῷ γένει τοῦτο* [i.e. this capacity] *τουτέστιν τῇ ἀνθρωπίνῃ ὑπάρχει φύσει* (he therefore interpreted *γένος* as "the nature of man"), *καὶ ὑλικὸν τὸ τοιοῦτον δυνάμει ὡς τῷ γίνεσθαι καὶ τῷ ἑτέρωθεν δέχεσθαι τελειούμενον· διὸ πρόσκειται τὸ* **καὶ ὕλη**. Such a capacity, needing development and instruction to perfect it, has kinship with matter. Probably it was from following a Latin translation and not from any deference to this remark of Simpl. that Zabarella treated *ὕλη* as predicate with *τοιοῦτον*: haec est potentia ad actum primum, quae est potentia subiectae materiae, quia homo est subiectum, capax ac veluti materia scientiae. The natural endowment implied in being a member of a species is the starting-point of all further acquisition, but A. could hardly use *δύναμις* here to explain *δυνατός*. Cf. *Metaph.* 1032 a 20 *ἅπαντα δὲ τὰ γιγνόμενα ἢ φύσει ἢ τέχνῃ ἔχει ὕλην· δυνατὸν γὰρ καὶ εἶναι καὶ μὴ εἶναι ἕκαστον αὐτῶν, τοῦτο δ' ἐστὶν ἡ ἑκάστῳ ὕλη*, 1039 b 29 sq., 1071 a 8—11, 1069 b 14 sq.

a 29. τόδε τὸ Α. The same illustration recurs *Metaph.* 1087 a 20 *καὶ ὁ θεωρεῖ ὁ γραμματικός, τόδε τὸ ἄλφα ἄλφα* [int. *ἐστίν*].

a 31. ἀλλ' ὁ μὲν. There is no verb in this sentence. We cannot supply *κατὰ δύναμιν ἐπιστήμων ἐστὶ* from the last sentence because of the participles *ἀλλοιωθεὶς* and *μεταβαλών*. The effect of these participles is best shown if we supply *γίγνεται ἐπιστήμων*, "but the one [becomes possessed of knowledge] after modification...the other...." **ἀλλοιωθείς**, "qualitatively changed." The process of conversion from ignorance is, as Philop. remarks, a change from privation to form, and is therefore, strictly speaking, a case of *γένεσις* rather than of *ἀλλοίωσις*. In the latter process the substratum remains the same, while the form or quality undergoes change, as exemplified in the change from false opinion to true. Cf. *Metaph.* 1069 b 10 sq.

a 32. ὁ δ' ἐκ τοῦ. This sentence also must be completed by understanding *ἐπιστήμων γίγνεται*, and with *ἐκ τοῦ ἔχειν...μὴ ἐνεργεῖν δ' εἰς τὸ ἐνεργεῖν*, the participle *μεταβαλὼν* must be supplied from the preceding clause. **τὴν αἴσθησιν.** The introduction of sense-perception, side by side with a branch of science like grammar, as an instance of the intermediate state, is certainly illogical: *ὁ ἔχων τὴν αἴσθησιν* instead of being *κατὰ δύναμιν ἐπιστήμων* is [illegible] *δύναμιν αἰσθανόμενος.* Cf., however, 417 b 18.

417 b 1. **ἄλλον τρόπον.** Take these words with μεταβαλὼν understood, "by another sort of change," and not with ἐνεργεῖν.

b 2. **οὐκ ἔστι δ' ἁπλοῦν,** "is not used in a single sense," i.e. has not invariably the same meaning, is an ambiguous term: cf. 426 a 26 ἀλλ' ἐκεῖνοι ἁπλῶς ἔλεγον περὶ τῶν λεγομένων οὐχ ἁπλῶς. **τὸ πάσχειν.** This word is rendered by "suffer" or "be acted upon." It is cognate with πάθος, the passive state or quality. But a thing may (*a*) be acted upon destructively by something of an opposite nature or (*b*) be acted on by something similar in such a way as to be preserved and perfected. The importance of this distinction lies in the application to sensation. A. accepts provisionally the common belief that sensation is πάσχειν τι, ἀλλοίωσις (416 b 33 sq., 415 b 24), and therefore κίνησις, but he aims at correcting this view by substituting ἐνέργεια for κίνησις. See 431 a 4—7. Similarly νόησις is often described as πάσχειν τι, but this also requires correction: 429 b 22—430 a 2. Again, for ὄρεξις see 433 b 18.

b 3. **σωτηρία,** i.e. not a deterioration or reversal, but an enhancing of the present condition, which is raised from potentiality to actuality.

b 4. **καὶ ὁμοίου οὕτως ὡς.** The agent is generically the same as that which it acts upon, but ἐναντίον or at least ἕτερον: and τὰ ἐναντία belong to the same genus. Hence its similarity is limited by the clause οὕτως ὡς δύναμις ἔχει πρὸς ἐντελέχειαν.

b 5. **θεωροῦν γὰρ γίγνεται.** I understand ἐπιστῆμον with γίγνεται, the participle θεωροῦν denoting the manner (not, as some hold, completing the predication of γίγνεται, which is an odd verb so to use, if we bear in mind ἅμα νοεῖ καὶ νενόηκεν). In technical language, the possessor of the ἕξις, by exercising his wisdom, becomes in actuality wise. His ἕξις is still a potentiality, though of a higher grade: in the schoolmen's phrase *potentia ad secundum actum*, *ad solam operationem*.

b 6. **οὐκ ἔστιν ἀλλοιοῦσθαι.** If the term is interpreted strictly, ἀλλοίωσις is ἡ κατὰ τὸ πάθος μεταβολή (*Metaph.* 1069 b 12), but this is inconsistent with the enhanced existence and self-development which he goes on to describe. Alex. Aphr. suggests γένεσις as a better term to describe not only the second transition from ἕξις to ἐνέργεια, but also the first transition by which a habit is acquired, though he admits that the term Becoming cannot be applied without qualification to the activity of thinking: ἀπ. καὶ λύσ. 84, 23 sq., 28; 81, 27—82, 20. But no physical analogy is adequate to describe an ἐνέργεια: cf. 407 a 32 sq., 431 a 3 sqq., *Eth. Nic.* 1174 a 13—17, b 13 οὐδὲ τούτων οὐθὲν κίνησις οὐδὲ γένεσις. **εἰς αὐτὸ.** The meaning is exactly the same as for ἑαυτὸ (cod. X, Soph.) and the balance of authority is against the change. Uncial MSS., presumably the archetypes of all our authorities, would omit the breathing altogether. **ἡ ἐπίδοσις,** "progress" or "growth." The actualisation of a thing enables it to realise itself.

b 8. **ὅταν φρονῇ.** Cf. 429 b 3 sq. Φρόνησις is an ἐνέργεια strictly so called, while οἰκοδόμησις is an example of physical motion as distinct from ἐνέργεια: see *Metaph.* 1048 b 23 sq., 30 sq.

b 9. **ὅταν οἰκοδομῇ.** He then passes from inaction to activity. Cf. 416 b 2. If the transition from potence into act is not ἀλλοίωσις for physical motion, of which building, οἰκοδόμησις, is an example, *a fortiori* it is not so for ἐνέργειαι strictly so called, like φρόνησις.

b 9 **τὸ μὲν οὖν...10 ἄγον.** The clause which begins with these words refers to the second transition, viz. that from the ἕξις to the ἐνέργεια, or from knowledge implicit to the exercise of knowledge, and asserts that the agent in this change should not be called instruction. The rest of the sentence b 12—16 deals with the first transition which results in the acquiring of the habit. The patient in

both stages I take to be the same, who, when he has been instructed or has learned for himself, is able to think and exercise his knowledge at will. Cf. 429 b 5—9.

b 10. **κατὰ τὸ νοοῦν καὶ φρονοῦν**: in relation to that which cogitates and thinks. Here *κατὰ* does not much differ from *περὶ* c. acc. = "concerning." The whole phrase indicates the subject of this development from potential to actual, i.e. *τὸ ἀγόμενον* understood as correlative to *τὸ ἄγον*. Alex. Aphr. appears to have read *κατὰ τὸ νοεῖν καὶ φρονεῖν*, unless his citation, *ἀπ. καὶ λύσ.*, 81, 15 sq., is inexact.

b 11. **ἀλλ' ἑτέραν**. No special term is suggested for this application or use of knowledge already acquired.

b 13. **οὐδὲ πάσχειν φατέον**: because of the implication of suffering and deterioration, *φθορά*, which this term and *ἀλλοίωσις* contain. From the stage of pure potentiality advance is possible either to the acquirement of a habit or in the opposite direction towards privation and deterioration.

b 14. **δύο τρόπους**. There is the change from ignorance to knowledge and the change (by forgetting) from knowledge to ignorance.

b 15. **τὰς στερητικὰς διαθέσεις**, "privative conditions." *Στέρησις* and *ἕξις* are usually opposed, the term *στέρησις* being employed to denote the privation or absence of a particular form, *ἕξις* its presence. They are chiefly used in connexion with the transition from or to contraries, as from health to sickness: cf. *Metaph.* 1022 b 22, 1070 b 12. In the latter passage form, privation and matter are called the three principles of things. Since *ἕξις* and *στέρησις* are relative terms (*Categ.* 8, 11 a 22 *τῶν πρός τι*, *ib.* 10, 12 a 26 *περὶ ταὐτόν τι*), the negative quality may even be said to be in some sense a positive quality: *Metaph.* 1019 b 6 *εἰ δ' ἡ στέρησίς ἐστιν ἕξις πως*...(b 9) *εἰ ἐνδέχεται ἔχειν στέρησιν*: e.g. cold, the privation of heat, may be regarded equally with heat as a degree of temperature. For the distinction between matter and privation see *Metaph.* 1033 a 5—26.

b 16. **τὰς ἕξεις καὶ τὴν φύσιν**. The subject is capable of taking on qualities or positive states (*ἕξεις*) and so becoming what nature designed it to be (*φύσιν, τουτέστιν ἐφ' ὃ πέφυκε*, as Philoponus puts it, 304, 24 sq.: cf. 418 a 25): nature of course always aiming at the good and tending to perfection. In *Metaph.* 1044 b 30 A. asks: Since the body is potentially healthy, and disease is the opposite of health, is the body potentially diseased as well as potentially healthy? His answer is 1044 b 32 *ἢ τοῦ μὲν καθ' ἕξιν καὶ κατὰ τὸ εἶδος ὕλη, τοῦ δὲ κατὰ στέρησιν καὶ φθορὰν τὴν παρὰ φύσιν;* In so far as it is related to positive state and to form, the body is the matter of health; in relation to privation and unnatural deterioration, it is the matter of disease. Cf. Bonitz *ad loc.*

b 16. **τοῦ δ' αἰσθητικοῦ**. The distinctions just drawn between the two stages of potentiality and the stage of actuality, and the transitions from the one to the other, apply to sensation as well as to knowledge. The first step which transforms pure potentiality into a sensitive thing or potential sensibility is taken at birth. The animal after birth has an aptitude (*ἕξις*) for sensation, which is similar to the possession of knowledge without the application of it. Later on, upon contact with external objects, the animal will exercise its powers of sensation, just as the one possessed of knowledge passes to the application and active exercise of his knowledge. Thus sense is a *δύναμις συγγενής*, *Metaph.* 1047 b 31 sqq., it comes neither by habit nor by instruction; whereas artistic skill and moral virtue are only acquired by practice. **ἡ μὲν πρώτη μεταβολή**. The first change implies a second change. The commentators take the first to be the passage from pure indeterminate potentiality to the *ἕξις* of sensitivity in

the one case and of knowledge in the other. The second change is the passage from this ἕξις unused to its actual exercise, cf. Alex. Aphr. ἀπ. καὶ λύσ. III. 3, 84, 33 *εἰπὼν δὲ ταῦτα...μετῆλθεν ἐπὶ τὴν αἴσθησιν, καὶ ἔδειξεν, τίς μὲν ἡ πρώτη δύναμίς ἐστι, καὶ πῶς καὶ ὑπὸ τίνος εἰς τὴν ἕξιν μεταβάλλει ἡ τοιαύτη δύναμις, πῶς δὲ καὶ ὑπὸ τίνος ἡ δευτέρα εἰς τὴν ἐνέργειαν, καὶ λέγει τὴν μὲν ἐκ τῆς ὑλικῆς δυνάμεως μεταβολὴν εἰς τὴν κατὰ τὴν ἕξιν γενέσθαι ὑπὸ τοῦ γεννῶντος δηλονότι τὸ ζῷον.*

b 17. **ὅταν δὲ γεννηθῇ**, int. τὸ ζῷον. Them. however might be thought to imply that the subject is τὸ αἰσθητικόν: 56, 15 H., 103, 1 Sp. *ἐπὶ τῆς αἰσθήσεως τὸ μὲν σπέρμα τοῦ ζώου καὶ τὸ ᾠὸν τὴν πρώτην μεταβάλλει μεταβολήν, καθ' ἣν γίνεται αἰσθητικόν.*

b 18. **ἔχει ἤδη...καὶ τὸ αἰσθάνεσθαι.** This does not imply a new transition, but describes the consequence of the first, the possession of a power of sensation even before it is exercised. **ὥσπερ ἐπιστήμην**, in the same way as (in the example) ὁ δυνάμει ἐπιστήμων possesses knowledge, that is, he has the capacity to know even when he is not exercising it. So after birth, the child has the capacity of sense-perception, whether he exercises it or not; cf. Alex. Aphr. ἀπ. καὶ λύσ. III. 3, 85, 1 *γεννηθὲν δὲ ἔχει τὴν αἰσθητικὴν ἕξιν εὐθύς, ὥσπερ τὸ ἀναλαβὸν τὴν ἐπιστήμην.* To ὥσπερ answers καὶ by a well-known idiom which the phrase of Thucydides ὡς ἔδοξεν αὐτοῖς, καὶ ἐποίουν ταῦτα sufficiently illustrates. **καὶ τὸ κατ' ἐνέργειαν δέ**, int. αἰσθάνεσθαι. Καὶ...δέ, "yes, and." The parallel between sense-perception and knowledge is still maintained.

b 19. **ὁμοίως λέγεται τῷ θεωρεῖν**, we speak of the actual exercise of sensation in the same way as we speak of the application or actual exercise of knowledge. Cf. *De Sensu* 4, 441 b 22 *οὐ γὰρ κατὰ τὸ μανθάνειν ἀλλὰ κατὰ τὸ θεωρεῖν ἐστὶ τὸ αἰσθάνεσθαι.* As θεωρεῖν, at all events, is explicit actuality and the transition from the ἕξις of ἐπιστήμη to θεωρεῖν, or from (2) to (3) of the stages distinguished in 417 a 22 sqq., constitutes the second μεταβολή, in the case of αἰσθάνεσθαι this second transition must be that from the sensitivity or power of sensation, with which the creature is endowed at birth, to the active exercise of this power in actual sensation.

b 20. **τοῦ μέν**, int. αἰσθάνεσθαι. By **τὰ ποιητικὰ τῆς ἐνεργείας** are to be understood the agents which educe and transform potential sense, the faculty, into actual sensation, b 22. For, on the assumption that to perceive is to be passively affected and acted upon, there must be such an agent. Cf. 417 a 17 sq. *supra*, 426 a 4 sq., 431 a 4 sq., *De Sensu* 6, 445 b 7 *ποιητικὸν γάρ ἐστιν ἕκαστον αὐτῶν* [int. *τῶν παθημάτων τῶν αἰσθητῶν*] *τῆς αἰσθήσεως· τῷ δύνασθαι γὰρ κινεῖν αὐτὴν λέγεται πάντα*, *Metaph.* 1010 b 31—1011 a 2. **ἔξωθεν.** The affection of the percipient is αἴσθημα, *Metaph.* 1010 b 32. Its cause is something distinct from sense, ἕτερον παρὰ τὴν αἴσθησιν, and prior to it, *ib.* b 36 sq.: cf. *De Insomn.* 2, 460 b 2 *ἀπελθόντος τοῦ θύραθεν αἰσθητοῦ ἐμμένει τὰ αἰσθήματα αἰσθητὰ ὄντα.* Properly speaking, external objects do not affect the αἰσθητικόν, but only the αἰσθητήριον or organ of sense. Cf. Them. 56, 39 H., 104, 9 Sp. *ὅτι γὰρ οὐ πάσχουσα κυρίως ἡ αἴσθησις ὑπὸ τῶν αἰσθητῶν, ἀλλ' οὐδὲ ἀλλοιουμένη δέχεται αὐτῶν τὰ εἴδη, δῆλον ἐκεῖθεν· οὐ γὰρ λευκὴ γινομένη τῶν λευκῶν ἀντιλαμβάνεται, οὐδὲ θερμὴ τῶν θερμῶν*, Simpl. 124, 3 *τουτέστιν ὅτι δεῖ τι παθεῖν τὸ αἰσθητήριον ὑπὸ τῶν αἰσθητῶν ἔξω καὶ οὐκ ἐν τῷ αἰσθανομένῳ ὄντων· ἅπερ ποιητικὰ τῆς ἐνεργείας λέγεται, οὐχ ὡς ἐμποιοῦντα τὴν κρίσιν, ἀλλ' ὡς πάθος τι ἐν τῷ αἰσθητηρίῳ, ἐφ' ᾧ ἡ κριτικὴ ἐγείρεται ἐνέργεια.* But it will be presently explained (424 a 24—28) how the two, organ and faculty, are inseparably connected.

b 22. **τῶν καθ' ἕκαστον**, int. ἐστί. The actual exercise of sensation is concerned with particulars: cf. *Anal. Post.* I. 18, 81 b 6 *τῶν γὰρ καθ' ἕκαστον ἡ αἴσθησις* and I. 31, 87 b 28 *εἰ γὰρ καὶ ἔστιν ἡ αἴσθησις τοῦ τοιοῦδε καὶ μὴ τοῦδέ*

τινος, ἀλλ' αἰσθάνεσθαί γε ἀναγκαῖον τόδε τι καὶ πού καὶ νῦν. Thus it is restricted to a particular place and a particular time.

b 23. τῶν καθόλου. The objects of knowledge are universals; cf. again *Anal. Post.* I. 31, 87 b 37 αἰσθάνεσθαι μὲν γὰρ ἀνάγκη καθ' ἕκαστον, ἡ δ' ἐπιστήμη τῷ τὸ καθόλου γνωρίζειν ἐστίν: also 87 b 39—88 a 7. **ἐν αὐτῇ πώς ἐστι τῇ ψυχῇ.** Cf. *infra* 429 a 22—31, 431 b 26—432 a 3. By πώς, as we shall see hereafter, he means δυνάμει. Cf. 431 b 20, 22.

b 24. ἐπ' αὐτῷ, int. ἐστίν, "is in a man's power." Of Simplicius' alternative explanations of αὐτῷ (124, 28—30), the last τῷ ἐπιστήμονι ἀνθρώπῳ is preferable to τῷ ἐν τῇ ψυχῇ νῷ and to τῇ εἰς νοῦν ἀνεγειρομένῃ ψυχῇ.

b 25. ὑπάρχειν. The presence of the sensible object here and now is a necessary condition. See *Anal. Post.* 87 b 29, cited above, *note* on 417 b 22.

b 26. ὁμοίως δέ. What has been said about sense-perception applies equally to the arts and sciences based upon sense-perception. The practical and productive arts and sciences, commonly so called, require the use of external materials: architecture, navigation and (to a less degree) painting. But the reference need not be restricted to such sciences: cf. Them. 56, 25 H., 103, 17 Sp. ὅσαι τῶν τεχνῶν ποιητικώτεραι. All detailed observation which depends on external objects is intended.

b 29. εἰσαῦθις. The subject of νοῦς is resumed in III., c. 4.

b 31. τὸν παῖδα. The potentiality in this case is quite indeterminate. The child is capable of becoming a general or anything else, as he is capable of knowing and perceiving.

b 32. οὕτως ἔχει τὸ αἰσθητικόν. This has been taken to mean that it is with sensibility as with knowledge, viz. that sensibility, like knowledge, has two grades of potentiality. But the Greek commentators must surely be right in restricting οὕτως to the second grade, οὕτως ἀλλ' οὐκ ἐκείνως: "it is in this latter sense that we must understand the term potential of the sensitive subject." Cf. Alex. Aphr., ἀπ. καὶ λύσ. 85, 25 κατὰ τὸ δεύτερον σημαινόμενον τοῦ δυνάμει τὸ δυνάμει αἰσθάνεσθαι καὶ τὴν δυνάμει αἴσθησιν λέγεσθαι. The corresponding use of οὗτος = the latter of two, the last of three, is not uncommon, e.g. *Phys.* VIII. 7, 260 a 28, where ταύτην must replace φοράν.

418 a 3. ὡς κυρίοις ὀνόμασιν, as proper and adequate terms for whichever of the two processes we are talking about. When we talk of sensation, they will denote the latter process, viz. the transition from ἕξις to ἐνέργεια, if I am right in following the commentators in the preceding note, though these terms are not strictly appropriate to the transition from ἕξις to ἐνέργεια (called above σωτηρία τοῦ δυνάμει ὄντος). Obviously when a term has two or more meanings, it cannot be strictly appropriate to more than one. Readers of the *Poetic* are familiar with κύριον ὄνομα as opposed to μεταφορά, γλῶττα or ξενικόν for the legitimate, ordinary, current application of a term in contradistinction to its figurative or archaic use (cf. 1457 b 3, 1458 a 19, a 22 sq.): κύριον ὄνομα, as Cope says, is "the proper word by which any object is designated and the word correctly employed to express it." Trend. thinks the metaphor is from the law courts, "as far as their authority goes." I prefer to explain, "not as technicalities but as ordinary words with ordinary liabilities," and therefore taking on the necessary qualifications in particular cases.

a 4. οἷον. It is to be noted that it is in respect of quality that faculty is assimilated to the sensible object, cf. *infra* 424 a 22 ὑπὸ τοῦ ἔχοντος χρῶμα ἢ χυμὸν ἢ ψόφον πάσχει, ἀλλ' οὐχ ᾗ ἕκαστον ἐκείνων λέγεται, ἀλλ' ᾗ τοιονδί. **καθάπερ εἴρηται.** This has been virtually anticipated if we piece together 417 b 18 sq., 417 b 3—7, 417 a 12—20. In other words, the faculty of sense must be capable

of assuming the peculiar quality of the object of sense, and in the act of sensation the faculty adapts itself to the object. To begin with they are dissimilar, but in the act of sensation they become similar. In sensation the faculty takes in the object *minus* its matter.

a 5. **πάσχει μὲν οὖν.** Cf. *supra* 417 a 19, 20, *notes*.

Chapter VI.

418 a 7—25. Objects of sense may be classified according as they are perceived (*a*) *per se*, in themselves or (*b*) *per accidens*, incidentally. Objects directly perceived may be either (1) objects of the special senses or (2) objects common to several, or all, of the senses [§ 1]. An object of a special sense is that which one sense only can perceive, about which that one sense cannot be mistaken, as colour, sound and the various qualities corresponding to the varieties of the sense of touch [§ 2]. Objects of the senses in common are such qualities as motion, rest, number, shape and magnitude [§ 3]. Besides these, there are (*b*) objects indirectly or accidentally perceived. In such cases what is perceived is an accident or concomitant of the object perceived directly or *per se*. This latter is the sensible object in the proper sense of the term [§ 4].

In order to understand the full import of A.'s distinction we must enlarge our notion of *συμβεβηκός*. Usually a quality or attribute is said to be an accident of, or to belong to, a thing or substance. But, as *συμβαίνειν* means simply "to go with" or "accompany" something, it may be, and is, used to denote the thing or substance which goes with or accompanies its attribute or quality: e.g. we perceive white colour directly, but the son of Diares, the substance to which the colour belongs, we perceive indirectly, the man being regarded as a concomitant of the colour.

418 a 8. **πρῶτον.** In accordance with the rules of procedure laid down in II., c. 4, we must study not only the *ἔργα καὶ πράξεις*, but also the *ἀντικείμενα*. Cf. 415 a 16—22. **καθ' αὑτὰ...9 κατὰ συμβεβηκός.** It has been shown in the notes on 406 a 4, 5 that *κατὰ* = "in virtue of" and why two phrases the precise meaning of which is *per se* and *per accidens* should, like *καθ' αὑτὸ* and *καθ' ἕτερον*, become practically equivalent to "directly" and "indirectly." We perceive the qualities of things, *τὰ ἴδια αἰσθητά*, and the attributes of things, *τὰ κοινὰ αἰσθητά*, directly; the things themselves, to which these qualities and attributes belong, we perceive indirectly. This account, transparently simple as it seems, raises some further questions. The common belief is that we directly perceive the things, and the analysis of sensation points the same way. In II., c. 5 we learned that the process of actual sensation, the transition of the faculty from potentiality to active operation, has an external cause, *τὸ αἰσθητόν*, *τὸ καθ' ἕκαστον*, which we are bound to regard as a substance or thing. What then, exactly, is perceived, the qualities and attributes, or the things to which they belong? For example, is it *χρῶμα* or *τὸ ἔχον τὸ χρῶμα*? A.'s answer would seem to be (cf. 418 a 24 sq.) that, properly speaking, the quality or attribute, not the thing or subject of attributes, is perceived directly. Investigations of the special senses tend to confirm this. But the implications of ordinary language and the thought which it expresses, as well as his own doctrine that qualities, attributes and properties do not exist independently of the things or substances in which they inhere, compel him to find some means by which things or substances, e.g. *τὸ ἔχον τὸ*

χρῶμα, may also be entitled to rank as perceived objects or sensibles. Accordingly, he says we perceive the thing *per accidens*. If he occasionally employs ordinary language and speaks of the thing, not its quality, as perceived by the special senses (e.g. 422 a 10), this must be taken with the qualification "so far as it possesses the quality in question," e.g. the thing *quâ* coloured, sonorous or odorous. It is the constant tendency of language and thought to neglect this qualification and to treat the part as if it were the whole. We really perceive whiteness, we think and say we perceive Cleon. The phrase *κατὰ συμβεβηκὸς* first occurred in this connexion 414 b 9 (on 417 a 5 sq. see *note*): we shall meet with it again in III., c. 1 and III., c. 3. Cf. 425 a 15, a 20—b 4, 428 b 18—30.

a 10. κοινὸν πασῶν. This statement requires qualification. See *note* on a 19 *infra*.

a 11 ὃ μὴ ἐνδέχεται...12 ἀπατηθῆναι. Probably the two characteristics should be taken together. Cf. the important qualification of 428 b 18 *ἡ αἴσθησις τῶν μὲν ἰδίων ἀληθής ἐστιν ἢ ὅτι ὀλίγιστον ἔχουσα τὸ ψεῦδος*: also 428 a 11 sq., 430 b 29 sqq. (of sight), *De Sensu* 4, 442 b 8 *διὸ καὶ περὶ μὲν τούτων* [int. *τῶν κοινῶν*] *ἀπατῶνται, περὶ δὲ τῶν ἰδίων οὐκ ἀπατῶνται, οἷον ἡ ὄψις περὶ χρώματος καὶ ἡ ἀκοὴ περὶ ψόφων*, *Metaph.* 1010 b 2 sq., with which must be taken the qualifications 1010 b 14—26.

a 12. οἷον ὄψις χρώματος. We might have expected *χρῶμα ὄψεως* [*ἴδιον κτλ.*] to conform with *ἴδιον ἑκάστης αἰσθήσεως* above. But a fresh construction seems to begin with *οἷον*, "sight is of colour," a genitive of relation, as in 418 a 26, 422 a 20 sqq., 422 b 24, 424 b 34; or we might supply *αἰσθάνεται ὡς ἰδίου* from a 12 *αἰσθάνεσθαι*; or, less plausibly, *κριτική ἐστι* from a 14 *κρίνει* below; or again *χρώματος, ψόφου, χυμοῦ* might conceivably, though not very probably, be objective genitives closely attached to the governing nouns, in which case there would be no need to supply *ἐστί*. Cf. 430 b 29 *τὸ ὁρᾶν τοῦ ἰδίου ἀληθές*, where, however, see critical *notes*.

a 14. πλείους μὲν ἔχει διαφοράς. I consider *μὲν solitarium*, as in 412 a 7. Whatever the punctuation, the sentence *ἀλλ' ἑκάστη γε κτλ.* does not in meaning answer the present clause. For *μὲν solitarium* cf. *De Interpr.* 14, 23 b 30, *Pol.* 1257 a 15, 1262 a 7, 1270 a 34, 1271 a 19, 1284 b 13. See also Wyse, *Speeches of Isaeus*, p. 181. What A. means is explained 422 b 17 sqq., where the question is raised whether touch be not one single sense, but a variety of senses with a corresponding variety of objects. It is quite another matter that the single senses of sight and hearing are sometimes said to reveal many qualities in objects. Thus we have the varieties of colour recognised 421 a 14 sq., varieties both of colour and of sonorous objects in 420 a 26—29 and similar varieties of flavours and odours, there called *εἴδη* (=species), 421 a 16—18, 422 b 10: cf. *Metaph.* 980 a 26 *μάλιστα ποιεῖ γνωρίζειν ἡμᾶς αὕτη τῶν αἰσθήσεων καὶ πολλὰς δηλοῖ διαφοράς* [int. *ἡ ὄψις*], *De A.* 422 b 28 *καὶ ἐπὶ τῶν ἄλλων αἰσθήσεών εἰσιν ἐναντιώσεις πλείους, οἷον ἐν φωνῇ οὐ μόνον ὀξύτης καὶ βαρύτης, ἀλλὰ καὶ μέγεθος καὶ μικρότης καὶ λειότης καὶ τραχύτης φωνῆς καὶ τοιαῦθ' ἕτερα. εἰσὶ δὲ καὶ περὶ χρῶμα διαφοραὶ τοιαῦται ἕτεραι.* All these are varieties of colour in the one case and sound in the other, whereas A. is careful to point out that it is not possible to reduce all tangibles to any one such common quality: 422 b 32 *ἀλλὰ τί τὸ ἓν τὸ ὑποκείμενον, ὥσπερ ἀκοῇ ψόφος, οὕτω τῇ ἁφῇ, οὐκ ἔστιν ἔνδηλον.* They form at least two groups, temperature and resistance.

a 15. περὶ τούτων, int. *τῶν ἰδίων.*

a 16. ἀλλὰ τί. This is a judgment respecting the direct object, whether that object be construed strictly as the quality, colour, or as the thing or

substance, τόδε τι, in which the colour inheres. Thus, as a judgment, it falls outside the province of the special sense. Note that the neuter adjective is ambiguous. As τὸ καλὸν = beauty, so τὸ λευκὸν = whiteness. Even in English the white, the beautiful may mean either thing or quality, but the dark need not, and usually does not, mean a thing or substance, τόδε τι. Sensation pure and simple, without the reference to a thing, would be expressed in a judgment of a different form: "It is white," or at the utmost "This sensation is the sensation of white."

a 17. ἑκάστου. There is no need to alter this, with the scribe of W, into ἑκάστης, if we follow the lax ruling of Bonitz, *Ind. Ar.* 484 a 59: pronomina demonstrativa interdum non sequuntur genus eius nominis, ad quod referuntur, sed neutro genere ponuntur. Cf. 418 b 18 ἔστι δὲ τὸ σκότος στέρησις τῆς τοιαύτης ἕξεως ἐκ διαφανοῦς, ὥστε δῆλον ὅτι καὶ ἡ τούτου παρουσία τὸ φῶς ἐστίν. In any case the meaning is clear: "are special to each sense," as ἴδιον...ἑκάστης αἰσθήσεως above. **κοινά.** On these see 425 a 14 sqq. and *De Sensu* 1, 437 a 8 sq., where their perception is attributed chiefly (μάλιστα) to sight. Also cf. Plato, *Theaet.* 185 C, D, where the conception of "common objects of apprehension" is the same, though number is the only example common to the two lists, and Plato refuses in the sequel to attribute their apprehension to sense at all, but makes them directly apprehended by the soul itself. Cf. *De Insomn.* 1, 458 b 4 κοινὰ δ' ἐστὶ τῶν αἰσθήσεων οἷον σχῆμα καὶ μέγεθος καὶ κίνησις καὶ τἄλλα τὰ τοιαῦτα, ἴδια δ' οἷον χρῶμα ψόφος χυμός, *De Mem.* 1, 450 a 9 μέγεθος δ' ἀναγκαῖον γνωρίζειν καὶ κίνησιν ᾧ καὶ χρόνον· καὶ τὸ φάντασμα τῆς κοινῆς αἰσθήσεως πάθος ἐστίν· ὥστε τοῦτο φανερὸν ὅτι τῷ πρώτῳ αἰσθητικῷ τούτων [int. χρόνου, μεγέθους, κινήσεως] ἡ γνῶσίς ἐστιν, *ib.* 451 a 16 sq. The omission of time, in view of 433 b 7 χρόνου αἴσθησιν, is remarkable, but, since it is defined as ἀριθμὸς κινήσεως κατὰ τὸ πρότερον καὶ ὕστερον, *Phys.* IV. 11, 219 b 2, its claim to a place on the list must be regarded as deducible either from number or from motion or both. The reference in *Eth. Nic.* 1142 a 27 οὐχ ἡ τῶν ἰδίων [int. αἴσθησις], ἀλλ' οἵᾳ αἰσθανόμεθα ὅτι τὸ ἐν τοῖς μαθηματικοῖς ἔσχατον τρίγωνον must be to σχῆμα as one of the κοινά. Bywater brackets ἐν τοῖς μαθηματικοῖς.

a 19. πάσαις. Cf. the important passage 425 a 14—30, which introduces us to *sensus communis* in relation to these common sensibles. The statement κοινὰ πάσαις is quite true of number and unity (see 425 a 19 sq.): each sense perceives one object, and number is made up of units. The statement is also true of motion, but magnitude and figure can hardly be said to be directly perceived except by sight and touch. Cf. *De Sensu* 4, 442 b 5 μέγεθος γὰρ καὶ σχῆμα καὶ τὸ τραχὺ καὶ τὸ λεῖον, ἔτι δὲ τὸ ὀξὺ καὶ τὸ ἀμβλὺ τὸ ἐν τοῖς ὄγκοις κοινὰ τῶν αἰσθήσεών ἐστιν, εἰ δὲ μὴ πασῶν, ἀλλ' ὄψεώς γε καὶ ἁφῆς, where it will be seen that A. adds τραχὺ and λεῖον, ὀξὺ and ἀμβλὺ to the list of common sensibles, or rather to those common to sight and touch. The fact is that no one of these common sensibles is perceived by one sense only; and all the senses, in various combinations, at one time or another contribute to make them known. This leads to new and important developments, 425 a 27.

a 22. τούτου, "him," i.e. Diares' son. Strictly speaking, it is the whiteness of the object that you perceive by the sense of sight. This is plainly stated in 425 a 24 οὐδαμῶς ἂν ἀλλ' ἢ κατὰ συμβεβηκὸς ᾐσθανόμεθα, οἷον τὸν Κλέωνος υἱὸν οὐχ ὅτι Κλέωνος υἱός, ἀλλ' ὅτι λευκός· τούτῳ δὲ συμβέβηκεν υἱῷ Κλέωνος εἶναι. Cf. Simpl. *in Phys.* 1062, 2 ὁ γὰρ Σωκράτης κατὰ συμβεβηκὸς ὁρατός, καθ' αὑτὸ δὲ τὸ χρῶμα. **αἰσθάνεται,** int. ὁ αἰσθανόμενος. Cf. 403 a 22, *note*. **ὅτι,** "because." The clause explains why Diares' son is said to be perceived κατὰ συμβεβηκός, "as a concomitant": that is what he is.

a 23. τοῦτο οὗ αἰσθάνεται, "that which in this manner (i.e. indirectly) you perceive," viz. Diares' son, the substance to which the quality white belongs. Thus *τοῦτο* and *τούτου* refer to the same thing. As above remarked, though it is more usual to call the quality whiteness a *συμβεβηκὸς* of the substance, we have a perfect right to call the thing or substance a *συμβεβηκὸς* of the quality, and this A. occasionally does: e.g. 425 a 25 sq., *Anal. Prior.* I. 27, 43 a 33 *τῶν γὰρ αἰσθητῶν σχεδὸν ἕκαστόν ἐστι τοιοῦτον ὥστε μὴ κατηγορεῖσθαι κατὰ μηδενός, πλὴν ὡς κατὰ συμβεβηκός· φαμὲν γάρ ποτε τὸ λευκὸν ἐκεῖνο Σωκράτην εἶναι καὶ τὸ προσιὸν Καλλίαν*, *Anal. Post.* I. 22, 83 a 1—14, a passage in which both uses of the term *κατὰ συμβεβηκὸς* occur. See Torst. pp. 175 sq. (*note* on 428 b 18) and the remarks of Professor Bywater on the same passage, *Journal of Phil.* XVII., p. 57. The order of the words makes it more natural to regard *τοῦτο* as the antecedent of *οὗ*, though it is just conceivable that *τῷ λευκῷ*, far removed as it is from the relative, is the antecedent. We should then translate "because this fact is incidental to the white thing which the subject perceives directly." Still, the perception of a white object, being a case of direct perception, is not what at this point we should expect to be marked by *οὗ αἰσθάνεται*, but rather the perception of something *per accidens*. Such a view might, it is true, be thought to derive support from the paraphrase of Them. 58, 8 H., 106, 16 Sp., which in Spengel's text appears as follows: *Ἀριστοτέλης δὲ τὰ κατὰ συμβεβηκὸς αἰσθητὰ οὕτως ἑρμηνεύει· κατὰ συμβεβηκὸς γὰρ τούτου αἰσθάνεται, διότι τῷ λευκῷ* **οὗ αἰσθάνεται, τοῦτο συμβέβηκεν,** *ὥσπερ ἂν εἰ λέγοι ὅτι κατὰ συμβεβηκὸς τοῦ Διάρους αἰσθάνεται, ὅτι τῷ λευκῷ συμβέβηκε Διάρει εἶναι.* Heinze, however, following 418 a 22 *ὅτι τῷ λευκῷ συμβέβηκε τοῦτο οὗ αἰσθάνεται*, in spite of all the MSS. of Them., has altered the relative order of the words in thick type. He gives *τοῦτο συμβέβηκεν οὗ αἰσθάνεται*, and this does better accord with the subsequent words of Them. *ὅτι τῷ λευκῷ συμβέβηκε Διάρει εἶναι.* **ᾗ τοιοῦτον.** To be taken with *τοῦ αἰσθητοῦ*. The percipient subject, *τὸ αἰσθανόμενον*, is not acted upon by the concomitant thus indirectly perceived, *τοῦ αἰσθητοῦ*, as such, i.e. as *κατὰ συμβεβηκὸς αἰσθητόν* (in the illustration the eye is not affected by the white object, *quâ* son of Diares), but by the sensible object as coloured, sonant, flavoured or tangible. Cf. 424 a 23 *ἀλλ' οὐχ ᾗ ἕκαστον ἐκείνων λέγεται, ἀλλ' ᾗ τοιονδί.* However, A. permits himself to substitute the universal, e.g. colour, for the specific shade of colour as *τὸ αἰσθητόν*, of course *κατὰ συμβεβηκός*. See *Metaph.* 1087 a 19 *ἀλλὰ κατὰ συμβεβηκὸς ἡ ὄψις τὸ καθόλου χρῶμα ὁρᾷ, ὅτι τόδε τὸ χρῶμα ὃ ὁρᾷ χρῶμά ἐστιν· καὶ ὃ θεωρεῖ ὁ γραμματικός, τόδε τὸ ἄλφα ἄλφα.*

a 24. τὰ ἴδια, the specific objects of the particular senses and not *τὰ κοινά*, although both alike are *καθ' αὑτὰ αἰσθητά*. The view that the quality of the thing, and not the thing itself, is properly perceptible by sense is confirmed by *De Sensu* 6, 445 b 11—13, where a body without colour, weight, or any other such attribute, viz. sound, smell, flavour or tactile properties, is declared to be not perceptible by sense at all, *οὐδ' αἰσθητὸν ὅλως*. A. continues b 13 *ταῦτα γὰρ* [int. *τὰ πάθη*] *τὰ αἰσθητά.*

a 25. πρὸς ἅ. The relative sentence is part of the predicate, joined to *κυρίως αἰσθητά*. The teleological view again emerges. Each sense is by nature so constituted as to be affected by, and to perceive, its special objects. Thus, while concomitant or accidental objects of sense, as such, exert no influence on the sense, direct objects of sense, whether *κοινὰ* or *ἴδια*, do; with the difference that the *κοινὰ* are always associated in perception with the specific objects of particular senses. While the eye is always affected by and perceives colour, it makes all the difference whether the coloured object be perceived as of a given shape or size, in rest or in motion. This chapter must

be carefully compared with Book III., cc. 1, 2. Whatever conclusion be adopted on the controverted points, it is obvious that perception *per accidens* receives an extension of meaning in III., c. 1. Cf. also *Metaph.* 1087 a 19 sq. cited in second *note* on 418 a 23 *supra.* If, then, A. has not given complete information on one important point raised in II., c. 6, it may be plausibly argued that the account here given of τὰ κοινὰ is also imperfect.

CHAPTER VII.

In placing sight at the head of the special senses A. departs from the rule he has hitherto observed of starting with the lowest and most widely diffused manifestation of life. If he had conformed to this rule, he would have begun with touch. Cf. *Eth. Nic.* 1118 b 1—3. In III., c. 12 A. does begin with touch 434 b 10 sqq. and proceeds to taste b 18 sqq. and the other senses b 24 sqq. Why, then, is the *ordo doctrinae* not the *ordo naturae* here also? Various reasons have been assigned for the procedure: almost every commentator has his own. It may have been the difficulty of establishing the presence of a medium in taste and touch which determined A. to reserve these senses until he had firmly established the necessity of a medium for seeing, hearing, smelling. Sight, he tells us (429 a 3), is the sense *par excellence*, and writers of all ages have been tempted to regard it as the typical sense and to make general statements about sensation, which are only partially, if at all true, of the other senses; just as A.'s predecessors concentrated their attention upon the soul of man, while at the same time making statements about the soul in general. In the application of his doctrine of sensation to memory and imagination A. appears to err in this direction. Zabarella maintains that sight was taken first for purely practical reasons, because it had been most studied: more information had been accumulated about it, and it was therefore the easiest of the senses to explain.

In the explanation of sight A. proceeds from the cardinal facts that by this sense we distinguish objects (1) at a distance, (2) as coloured. Hence he assumes a medium upon which colour can act. The medium, in itself neutral, has two determinations, a positive state when it is illuminated and we say there is light, a negative state when we say there is darkness. The motion or activity set up by colour is of the type ἀλλοίωσις and not of the type φορά, for it takes place instantaneously, however great the distance between the coloured object and the eye. If the medium is there and not actualised, we have darkness, which is not the contrary of light but its mere absence; the normal activity of the medium gives light but not colour, special states of the medium when it is stimulated in special ways in consequence of special agents give colouring, and it is the presence of colours which makes things visible. This medium he calls "the transparent," τὸ διαφανές. Light itself, or this medium in normal operation, is not visible *per se*, but it is the necessary condition of the visibility of colour. The necessity of the medium and the prominent part it plays are more obvious in the case of seeing: and this is why, of the three topics discussed in the case of each special sense, viz. (1) the object, (2) the medium and (3) the sense-organ, in the words of Zabarella: Hic Aristoteles de obiecto pauca, de organo nihil, de medio permulta dicturus est. Here we have a valuable supplement in the *De Sensu*: in c. 2 of that tract the organ of vision receives considerable attention, c. 3 is wholly devoted to colours as the object of

vision, while the problems of cc. 6 and 7 have especial reference to that which A. regards as the principal and typical sense.

These facts premised, we give a short abstract of §§ 1, 2.

418 a 26—b 17. The object of sight is colour and phosphorescence, colour being crudely defined as that with which an object visible in itself is overlaid. It is the nature of colour to set the medium, which we may call "the transparent," in motion [§ 1]. Such a transparent medium is found in air and water, not as being air and water, but because of the presence in them of this something, the medium, which is also present in the eternal body above us [aether], and the medium is set in activity by fire or by aether, which has the same illuminative property as fire. From this it follows that light is not fire [as had been maintained by previous thinkers] nor anything corporeal at all, nor any emanation from body (which would be equally corporeal). Light is solely the presence of fire or of a similar agency in the medium [§ 2].

418 a 26. οὐ μὲν οὖν...ὁρατόν. It is implied that *ὅρασις* is the process or operation (*ἔργον* or *πρᾶξις*) of vision. Here again (cf. 418 a 7) A. is careful to follow the method proposed 415 a 16—22. He passes directly from the faculty (*ὄψις*) to the process (*ὅρασις*), and from the process to the correlated object (*ὁρατόν*). We shall find that he adheres to this procedure when dealing with each of the other senses. **ὁρατὸν δ'.** The special object of the sense of sight, i.e. the visible, is (1) colour, (2) phosphorescence. The best clue to the meaning of this discussion is to bear in mind that colour was regarded by the Pythagoreans as the surface of bodies, *De Sensu* 3, 439 a 30 *τὸ γὰρ χρῶμα ἢ ἐν τῷ πέρατί ἐστιν ἢ πέρας· διὸ καὶ οἱ Πυθαγόρειοι τὴν ἐπιφάνειαν χροιὰν ἐκάλουν.* A. corrects this view by making colour a property in the extremity, but not itself the extremity of bodies: 439 a 31 *ἔστι μὲν γὰρ ἐν τῷ τοῦ σώματος πέρατι, ἀλλ' οὔ τι τὸ τοῦ σώματος πέρας, ἀλλὰ τὴν αὐτὴν φύσιν δεῖ νομίζειν, ἥπερ καὶ ἔξω χρωματίζεται, ταύτην καὶ ἐντός.* He still speaks of it here (418 a 29) as *τὸ ἐπὶ τοῦ καθ' αὑτὸ ὁρατοῦ*: cf. *Top.* 107 b 28 and *Metaph.* 1022 a 16 *ἐν ᾧ πρώτῳ πέφυκε γίγνεσθαι, οἷον τὸ χρῶμα ἐν τῇ ἐπιφανείᾳ.* It is more exactly described in *De Sensu* 3, 439 b 11 sq. *ὥστε χρῶμα ἂν εἴη τὸ τοῦ διαφανοῦς ἐν σώματι ὡρισμένῳ πέρας.* Colour makes and defines the surface of the body *quâ* transparent, as figure defines it *quâ* extended. Colour makes the transparent medium itself visible and its own varieties visible through the medium. White and black as colours in solid bodies correspond to the condition of light or darkness in air. A coloured object, then, is one which has the cause of its visibility within itself (*ἐν ἑαυτῷ*), as distinguished from transparent substances, air and water, through which we can see the colour of other bodies. As with these transparent substances, so with light and its correlative darkness, for light is the medium in active operation, while if the medium is in a state of potentiality, i.e. present but not working or actualised, there is darkness. If we see colour in the water, we suspect colouring matter or some other foreign cause. If we see the transparent medium, it is because there is something analogous to colour actually present in it (*οἷον χρῶμα* b 11, *δι' ἀλλότριον χρῶμα* b 5); not, however, as a coating on the surface, but as intrinsic and constitutive of the medium in activity.

a 27. χρῶμα μέν, καὶ δ. For *μὲν* followed by *καὶ* Bonitz s.v. cites *Rhet.* II. 19, 1392 b 15 sqq., *Poet.* 3, 1448 a 31. Cf. Vahlen, *Beiträge* IV., p. 427. **λόγῳ μὲν ἔστιν εἰπεῖν,** "can be stated in words"; that is, a rational account can be given of it. It can be described, though it has as yet no name. The phr[illegible] how *λόγος* acquires a meaning which is frequent in A., that of rational [illegible]tion, something wider and vaguer than definition proper, cf. *Anal. P*[illegible]

94 a 11, *Metaph.* 1043 b 23—26, where definition is decried by the Cynics as μακρὸς λόγος (cf. 1091 a 7—9). **ἀνώνυμον δέ.** We call such objects phosphorescent. They are not seen in the light as coloured objects are, but in the dark; cf. 419 a 3.

a 28. προελθοῦσι, "if we proceed." There is no reference to a definite passage. The sense is that the progress of our enquiry will of itself clear up the point. For προελθοῦσι cf. 403 b 21.

a 29. τὸ γὰρ ὁρατόν ἐστι χρῶμα. This is a hard saying. We have just been told that the nameless quality now known as phosphorescence is also visible, and this is fully borne out by a careful consideration of 418 b 2 sq., 419 a 1—6, 22 sq., where we are told that all colour is seen in the light and cannot be seen without light, but that not all that is visible is visible in the light, that certain things (i.e. phosphorescent objects) are visible only in the dark and then without their natural colour, while fire again is visible both in the light and in the dark. Moreover, A. himself admits elsewhere that colour and visibility are not convertible terms, *Phys.* III. 1, 201 b 3 ἐπεὶ δ' οὐ ταὐτόν, ὥσπερ οὐδὲ χρῶμα ταὐτὸν καὶ ὁρατόν (cf. *Metaph.* 1065 b 32), but there the context shows that this is a case of logical distinction and material identity. Colour is τῷ ὑποκειμένῳ one and the same with the visible, but differently conceived, λόγῳ ἕτερον. There is no trace of a different reading. Them., indeed, paraphrases (58, 23 H., 107, 8 Sp.) ὁρατὸν δὲ λέγω πρώτως τὸ χρῶμα, but afterwards (58, 26 H., 107, 14 Sp.) νῦν δὲ τοσοῦτον κείσθω τὴν πρώτην, ὅτι τὸ ὁρατόν ἐστι χρῶμα. Simplicius seems to have expected τὶ γὰρ ὁρατόν, for (130, 6) he says ἀντὶ τοῦ τὶ ὁρατὸν εἴρηται νῦν τὸ ὁρατόν. If we wanted to emend the text, we should welcome Essen's happy inspiration, which is very unlike the great majority of his unconvincing and somewhat arbitrary alterations. He puts a full stop after προελθοῦσι and continues μάλιστα γὰρ ὁρατὸν κτέ. Thus A. is made consistent, and the proposal might seem to derive some slight support from Them.'s πρώτως and from the fact that Philop. (320, 4), in his abbreviated citation δῆλον ἡμῖν ἔσται προελθοῦσι, stops short of μάλιστα. But the passage from the *Physics* should make us chary of alteration. Them. by his πρώτως showed that he was conscious of the same difficulty in the text which Simpl. has noted: cf. Soph. 72, 26 δῆλον δὲ ἔσται ὃ λέγομεν προελθοῦσι μάλιστα. νῦν δὲ τὸ ὁρατὸν κυρίως ἐστὶ χρῶμα. The fact is, A. has descended to popular modes of speech (cf. 425 b 18 sq.) and committed the fault which he censures 426 a 26. In the light of 421 b 5, 422 a 20 sq., 424 a 10, 425 b 21 sq. we may opine that he was just as inexact in the opening statement of this chapter. But he is bound by his method to put down half truths provisionally and correct or qualify them as he goes along. **ἐπὶ τοῦ καθ' αὑτὸ ὁρατοῦ:** that is, on the surface of the coloured body, τοῦ κεχρωσμένου. Simpl. 130, 8 τὸ κεχρωσμένον κατὰ τὸ χρῶμα καὶ τὸ λαμπρὸν κατὰ τὴν λαμπρότητα ὁρᾶται. The comment of Simpl. would be more to the point if he had read κατ' αὐτὸ (=τὸ χρῶμα) instead of καθ' αὑτό. See *note* on a 26 ὁρατὸν δ'. I understand ὄν, rather than κατηγορούμενον, with τὸ ἐπὶ τοῦ...ὁρατοῦ. In any case the surface of the coloured body is meant by τὸ καθ' αὑτὸ ὁρατόν. There is this difference between body and the surface of body that, while κεχρῶσθαι may be truly predicated of both, it is only of the surface that it is predicable καθ' αὑτὸ and πρώτως. See *Top.* V. 5, 134 a 18—25 and Waitz *ad loc.* "sic corpus dicitur album ὡς κατ' ἄλλο τι πρῶτον, κατὰ τὴν ἐπιφάνειαν· ταύτῃ γὰρ πρώτως ὑπάρχει τὸ κεχρῶσθαι· ἡ δ' ἐπιφάνεια λέγεται κεχρῶσθαι ὡς πρῶτον αὐτό." The term coloured is applied to the body or coloured thing in virtue of its surface and so κατ' ἄλλο: *Phys.* IV. 3, 210 b 4 τὸ λευκὸν ἐν ἀνθρώπῳ ὅτι ἐν σώματι, καὶ ἐν τούτῳ ὅτι ἐν ἐπιφανείᾳ· ἐν δὲ ταύτῃ οὐκέτι κατ' ἄλλο. At the same

time to be a surface and to be coloured are logically quite distinct: *ib.* 210 b 6 *ἕτερά γε τῷ εἴδει ταῦτα, καὶ ἄλλην φύσιν ἔχει ἑκάτερον καὶ δύναμιν, ἥ τ' ἐπιφάνεια καὶ τὸ λευκόν.* Cf. *Metaph.* 1029 b 13, where A. gives the first rough approximation to the *τί ἦν εἶναι* as *ὃ λέγεται καθ' αὑτὸ* and then corrects it thus: (b 16) *οὐδὲ δὴ τοῦτο πᾶν· οὐ γὰρ τὸ οὕτως καθ' αὑτὸ ὡς ἐπιφάνεια λευκόν, ὅτι οὐκ ἔστι τὸ ἐπιφανείᾳ εἶναι τὸ λευκῷ εἶναι.* In the next sentence of our present passage A. enforces a similar distinction between *τὸ ἐπιφανείᾳ εἶναι* and *τὸ ὁρατῷ εἶναι*: to be a surface and to be visible are logically distinct.

a 30. καθ' αὑτὸ δὲ [int. *ὁρατοῦ*] **οὐ τῷ λόγῳ.** What is here meant by *καθ' αὑτὸ* is afterwards expressed by *τὸ οἰκεῖον*, as opposed to *τὸ ἀλλότριον, χρῶμα* 419 a 2, 6. The meanings excluded are those exemplified in *Metaph.* 1022 a 25 *ἐν μὲν γὰρ καθ' αὑτὸ τὸ τί ἦν εἶναι ἑκάστῳ, οἷον ὁ Καλλίας καθ' αὑτὸν Καλλίας καὶ τὸ τί ἦν εἶναι Καλλίᾳ· ἐν δὲ ὅσα ἐν τῷ τί ἐστιν ὑπάρχει* (i.e. the essential marks), *οἷον ζῷον ὁ Καλλίας καθ' αὑτόν. ἐν γὰρ τῷ λόγῳ ἐνυπάρχει τὸ ζῷον· ζῷον γάρ τι ὁ Καλλίας. ἔτι δὲ εἰ ἐν αὑτῷ δέδεκται πρώτῳ ἢ τῶν αὑτοῦ τινί, οἷον ἡ ἐπιφάνεια λευκὴ καθ' αὑτήν, καὶ ζῇ ὁ ἄνθρωπος καθ' αὑτόν· ἡ γὰρ ψυχὴ μέρος τι τοῦ ἀνθρώπου, ἐν ᾗ πρώτῃ τὸ ζῆν.* Thus *ὁρατὸν* is not (1) the *τί ἦν εἶναι* of the surface or coloured thing nor (2) one of its essential marks nor (3) the logical subject necessarily implied in its definition, as number is implied in any definition of odd or even, or surface in any definition of white colour. The relation of visibility to the surface of a body or other *κεχρωσμένον τι* here denoted by *τὸ καθ' αὑτὸ ὁρατὸν* might be compared to that between unity and being, of which A. says *Metaph.* 1003 b 22 *εἰ δὴ τὸ ὂν καὶ τὸ ἓν ταὐτὸ καὶ μία φύσις τῷ ἀκολουθεῖν ἀλλήλοις ὥσπερ ἀρχὴ καὶ αἴτιον, ἀλλ' οὐχ ὡς ἑνὶ λόγῳ δηλούμενα κτέ.*

a 31. κινητικόν, "capable of exciting motion," not, however, local movement, *φορά*, but qualitative change, *ἀλλοίωσις*. In this respect vision differs from the other senses, *De Sensu* 6, 446 a 20—447 a 10. This limitation of "motion" or "perturbation" must be remembered when Grote says, pp. 465 sq., 2nd edition (II., pp. 198 sq., 1st edition): "colour operates upon the eye...by causing movements or perturbations in the external intervening medium, air or water, which affect the sense through an appropriate agency of their own. The eye is of watery structure, apt for receiving the impressions." Cf. *De Sensu* 2, 438 b 3 *ἀλλ' εἴτε φῶς εἴτ' ἀὴρ ἐστι τὸ μεταξὺ τοῦ ὁρωμένου καὶ τοῦ ὄμματος, ἡ διὰ τούτου κίνησίς ἐστιν ἡ ποιοῦσα τὸ ὁρᾶν.*

418 b 1. τοῦ κατ' ἐνέργειαν διαφανοῦς: that is, "the medium in a state of activity." This, as we shall see below, is light.

b 2. οὐχ ὁρατὸν ἄνευ φωτός. This comes in somewhat prematurely, as it is only in the next section that A. tells us that light is *τὸ κατ' ἐνέργειαν διαφανές.* Cf. 419 a 7—9 and *notes*.

b 3. ἐν φωτί. The preposition is primarily significant of the environment, but as this is a *sine quâ non* (*οὗ οὐκ ἄνευ*), it comes to be at the same time instrumental.

b 5. ὡς ἁπλῶς εἰπεῖν, "to speak without qualification," i.e. in the unrestricted sense of the term *καθ' αὑτό*. See second *note* on 417 a 21. **δι' ἀλλότριον χρῶμα.** According to Philop. 322, 31 sq., the cause intended is light, which below is said to be *οἷον χρῶμα τοῦ διαφανοῦς*: to be quite accurate, we need to insert some qualifying word like *οἷον* here. The fact which A. has before him is that air or water, in order to be seen, must be illuminated. In themselves colourless, their transparent bodies take on the colour of the light in which they are seen. For the extension of this theory cf. *De Sensu* 2, 3, 439 a 18—439 b 16 and Alexander's Commentary on the *De Sensu* (45, 17 W., 95, 8 Th.) *δέχεται δὲ τὸ φῶς τὰ ἀόριστα διαφανῆ τῷ μὴ ἔχειν οἰκεῖον χρῶμα· τὰ*

γὰρ ἀόριστα, ὥσπερ τὸ πέρας ἴσχει παρ' ἄλλου οὐκ ἔχοντα οἰκεῖόν τε καὶ ὡρισμένον, οὕτω δὴ καὶ τὰ χρώματα. δι' οὗ δὴ ταῦτα φαίνεται, τοῦτο δὲ ἰδίως καλοῦμεν διαφανές, cf. (45, 13 W., 95, 3 Th.) ὧν δὴ τοῦτο [i.e. φῶς] χρῶμα, ταῦτα ἰδίως διαφανῆ.

b 6. ἀὴρ καὶ ὕδωρ καὶ πολλὰ τῶν στερεῶν. Instances of solid bodies which are (more or less) transparent are glass, certain crystals, and other translucent stones, horn, tortoise-shell. According to *De Sensu* 3, 439 b 8, all bodies have some measure of transparency on their surface as a necessary condition of colour: τὸ ἄρα διαφανὲς καθ' ὅσον ὑπάρχει ἐν τοῖς σώμασιν (ὑπάρχει δὲ μᾶλλον καὶ ἧττον ἐν πᾶσι) χρώματος ποιεῖ μετέχειν. But air, water and the other bodies properly and commonly called transparent (τὰ ἰδίως διαφανῆ) are distinguished as transparent through and through (δι' ὅλου) and are called by Alexander διοπτά (45, 12 W.).

b 8. ἐστὶ φύσις. In *De Sensu* 3, 439 a 23 κοινὴ φύσις καὶ δύναμις, ἣ χωριστὴ μὲν οὐκ ἔστιν, ἐν τούτοις δ' ἔστι: that is, an inseparable attribute, like number. Alex. calls it διαφάνεια (44, 1 W.). As often, φύσις implies objectivity. It is a property in the bodies in question, and not something subjective such as the theory of the Atomists made colour to be. **ἐν τούτοις ἀμφοτέροις**, i.e. air and water. Both these bodies (and the other bodies mentioned in *De Sensu* 3, 439 a 21—25) have in them the transparent, the medium which with its normal activity gives us light, and with its special states colours.

b 9. ἐν τῷ ἀιδίῳ τῷ ἄνω σώματι. Elsewhere called αἰθήρ (the word, according to A., being derived from ἀεὶ θεῖν). It is a form of matter peculiar to the celestial region and distinct from all the elements known in this sublunary region on and immediately around (cf. *Meteor.* I. 3, 340 b 6) the earth, one of its distinctive qualities being circular motion, *De Caelo* II. 3, 286 a 10—12: cf. *ib.* I. 3, 270 b 11 sqq., where it is called ἡ πρώτη οὐσία τῶν σωμάτων and τὸ πρῶτον σῶμα, ἕτερόν τι ὂν παρὰ γῆν καὶ πῦρ καὶ ἀέρα καὶ ὕδωρ. The stars themselves, as Philop. remarks (324, 18), are not transparent, for one star can occult another, but the various spheres in which A. supposed the heavenly bodies to be fixed are transparent. Yet at the same time A. thought it reasonable to believe that the stars were composed of the aether in which they moved (*De Caelo* II. 7, 289 a 13), and, as he admits many varieties of the aether, probably some were less transparent than others.

b 10. ᾗ διαφανές, int. ἐστι, "in so far as it is transparent," "*quâ* transparent"; that is, light is the active operation of the transparent as such, i.e. not as air, nor as water, nor as aether, but as transparent. **δυνάμει.** Placed thus before the relative for emphasis but going with ἐστὶ to complete the predication, an instance of true hyperbaton used, as Newman holds (see p. 211 sq. *supra*), for emphasis. **τοῦτ'**, int. τὸ διαφανές. **καὶ τὸ σκότος**: more fully thus, ἐν ἐκείνῳ καὶ τὸ σκότος ἐστί. Cf. *infra* 418 b 18—20, b 29—419 a 1. If instead of σκότος we had had the adjective σκοτεινόν, I should have been tempted to understand ἐν ᾧ as ἐν ᾧ χρόνῳ like ὅταν in b 11, b 30. Wherever light is potentially, darkness is actually; hence, too, where light is actually, darkness is potentially. The medium must have one or the other, the ἕξις, light, or the στέρησις, darkness: ἔστι μὲν οὖν ἐνεῖναι ἐν τῷ διαφανεῖ τοῦθ' ὅπερ καὶ ἐν τῷ ἀέρι ποιεῖ φῶς, ἔστι δὲ μή, ἀλλ' ἐστερῆσθαι, *De Sensu*, 3, 439 b 14—16. Cf. Philop. 341, 10—18, Simpl. 133, 2—21 and Them. 59, 26—33 H., 109, 7—17 Sp., from which last passage we may cite ἐν οἷς οὖν δυνάμει τὸ φῶς, ἐν τούτοις ἐστὶ καὶ τὸ σκότος· οὐδὲν γὰρ ἄλλο ἐστὶ τὸ σκότος ἢ τὸ δυνάμει διαφανές, τὸ δὲ φῶς ἐντελέχειά τις καὶ τελειότης τοῦ διαφανοῦς ᾗ διαφανές. All three are careful to tell us that this holds of our sublunary region only, the celestial region is always light: τὸ μὲν οὖν θεῖον σῶμα ἀεὶ διαφανὲς ἐνεργείᾳ· ἀεὶ γὰρ αὐτῷ πάρεστι καὶ τὸ φῶς.

b 11. τὸ δὲ φῶς οἷον χρῶμα. In *De Sensu*, c. 3, recapitulating and referring to this passage, A. says (439 a 18) *ἐστὶ χρῶμα τοῦ διαφανοῦς κατὰ συμβεβηκός· ὅταν γὰρ ἐνῇ τι πυρῶδες ἐν διαφανεῖ, ἡ μὲν παρουσία φῶς, ἡ δὲ στέρησίς ἐστι σκότος* (cf. 418 b 18—20), and 439 b 1 *φαίνεται δὲ καὶ ἀὴρ καὶ ὕδωρ χρωματιζόμενα· καὶ γὰρ ἡ αὐγὴ τοιοῦτόν ἐστιν.* By *αὐγή* is meant the sheen or brightness of air and sea, which present a series of shifting hues rather than a constant colour. The *De Sensu* makes the difference between colour and light to depend ultimately upon this, that the extremity of bodies, which have a limit of their own to bound them, is receptive of, and necessary to, colour, while bodies which have no such limit of their own have light. The one class have colour of their own and have it in their bounding surface. The others, in particular air and water, have no colour and, properly speaking, no bounding surface of their own; cf. also Alex. Aphr. on *De Sensu* (44, 18 W., 93, 7 Th.) *ἔστι δὲ καὶ τὸ πέρας αὐτοῦ ἐπιφάνεια τοιαύτη κεχρωσμένη, ὡς εἶναι, καθὸ μὲν σῶμα, τὴν ἐπιφάνειαν αὐτοῦ πέρας, καθὸ δὲ τοιόνδε καὶ διαφανές, τὸ χρῶμα.* In short, light is in the transparent medium what colour is in body.

b 13. ἓν καὶ ταὐτόν. The sentence is incomplete. *καὶ τούτῳ = καὶ τῷ ἄνω σώματι*: and with *ἓν καὶ ταὐτὸν* must be understood *καὶ τῷ πυρί*: that is, "for aether also has some quality identical with that in fire," more literally, "for to this also as well as to fire belongs (*ὑπάρχει*) one and the same attribute." Perhaps this common attribute may be described as illuminative, *τὸ φωτίζον*, for aether does not, like terrestrial fire, consume and destroy. Trend. is inexact in explaining *ἓν καὶ ταὐτὸν* as igni simile or "fiery," for fire is one of the things with which aether is itself co-ordinated, and *Meteor.* I. 3, 339 b 22, to which he appeals, merely states that Anaxagoras held aether to have received its name from a belief in its identity with fire: *ἣν Ἀναξαγόρας μὲν τῷ πυρὶ ταὐτὸν ἡγήσασθαί μοι δοκεῖ σημαίνειν.* **τί μὲν οὖν...14 εἴρηται.** Having given his own view, A. casts a glance upon current views which are excluded by it, especially (1) that light is fire or akin to fire (as was held by Empedocles and Plato), (2) that light is something corporeal emitted from the surface of bodies (Democritus).

b 14. οὔτε πῦρ. Cf. Plato, *Tim.* 45 B—46 B. Plato does not say in so many words that light is fire, but he explains vision as due to a stream of clear and subtle fire issuing from the eyes, of the same substance as the sunlight in the air, with which it mingles, the two combined then meeting the fire proceeding from the object seen. This at any rate suggests that fire and light are identical. **οὔθ' ὅλως σῶμα,** "nor a body at all," as it would be if it were fire (which the ancients regarded as an element or uncompounded body), and as in any case it must have been in the view of Democritus.

b 15. οὐδ' ἀπορροή. This view, that light is an emanation, is attributed to Empedocles in *De Sensu* 2, 437 b 23 *Ἐμπεδοκλῆς δ' ἔοικε νομίζοντι ὁτὲ μὲν ἐξιόντος τοῦ φωτὸς...βλέπειν.* Then, after citing the famous lines in which the structure of the eye is compared by Empedocles to a lantern, A. continues (438 a 4) *ὁτὲ δὲ ταῖς ἀπορροίαις ταῖς ἀπὸ τῶν ὁρωμένων* [int. *ὁρᾶν φησίν*]: cf. Theophr. *De Sensibus* § 7 (Diels, *Dox. Gr.* 500, 28) *φέρεσθαι δὲ* (*Ἐμπεδοκλῆς λέγει*) *τὰ χρώματα πρὸς τὴν ὄψιν διὰ τὴν ἀπορροήν.* The supposition of emanations is in full accord with Empedocles' distinctive doctrine of perception through pores or channels. Cf. Plato, *Meno* 76 C, D, *De Gen. et Corr.* I. 8, 324 b 26—35, cited in *note* on 418 b 20 below.

b 16. πυρὸς ἢ τοιούτου τινὸς παρουσία. This cannot mean the local presence of fire as of something material. For A. has just denied that light is a body at all. Nor has the light exactly the relation of form to the transparent regarded

as matter or substratum. The fire, which is the source of light, is not immanent in the transparent. It is not the illumining fire but the transmitted influence of the fire which actualises the medium and converts it from darkness into light. See 418 b 11—13 and *notes*. Them. explains "presence" as a mere relation: 60, 22 H., 110, 25 Sp. *σχέσις τοῦ παρόντος πρὸς ἐκεῖνο, ᾧ πάρεστι.* Plato uses *παρουσία* of colour, *Lysis* 217 C—E, in a very similar manner, and this may have suggested the term to A. for light. Cf. *De Sensu* 3, 439 a 20, the presence of something fiery constitutes light and its absence darkness.

418 b 18—419 b 3. Darkness is commonly thought to be the contrary of light; the fact is that light is the presence of a positive quality in the medium, darkness its mere absence or privation. Empedocles assumed motion of light, motion so rapid as to escape observation, an assumption legitimate perhaps if the distance were short, but not justified if light travels the whole distance from East to West [§ 3]. The medium that is to receive colour must itself be colourless, and the potentially transparent satisfies this condition, as also does that which is invisible or scarcely visible, like dusk. Some objects, namely those which are phosphorescent, are seen, not in the light, but in the dark, but in this case it is not the colours which are seen [§ 4]. That which is seen in daylight is colour, and this can stimulate motion in the transparent medium, viz. air, which extends continuously between the visible object and the eye. An object in contact with the eye is not visible. A medium of some sort reaching to the eye is essential to account for vision [§ 5]. If there were a void between eye and object, vision, and *a fortiori* accurate vision, of a minute and distant object would (*pace* Democriti) be impossible [§ 6]. Fire is seen both in the light and in the dark, naturally, as being the necessary condition of the actualisation of the transparent medium [§ 7]. A medium intervening between the object and the organ is, as will hereafter appear, indispensable in the case of all senses [§§ 8, 9].

418 b 18. δοκεῖ τε...ἐναντίον. "This [viz. A.'s] explanation of light is confirmed by the ordinary view which regards light as the opposite of darkness" (Wallace). And so Philoponus (344, 13) *εἰ γὰρ τὸ σκότος ἀντίκειται τῷ φωτί, τὸ δὲ σκότος οὐδὲν ἄλλο ἐστὶν ἢ στέρησις φωτός (οὐ γὰρ γινομένου τινὸς ἐν τῷ ἀέρι γίνεται τὸ σκότος, ἀλλὰ μόνον τῇ τοῦ φωτὸς ἀπουσίᾳ), τὸ δὲ ἀντικείμενον τῇ στερήσει ἕξις ἐστί, τὸ φῶς ἄρα ἕξις ἐστὶ τῆς τοιαύτης δυνάμεως ἐν τῷ διαφανεῖ, καὶ οὐ σῶμα.* Darkness is the privation of the *ἕξις* described, which explains why the presence of this *ἕξις* in the diaphanous medium is light. From 417 a 22—b 16 we learn that *ἕξις* stands to *στέρησις*, e.g. knowledge to ignorance, as actual operation to mere potence. The medium, when illumined, is raised from its dormant state.

b 19. στέρησις τῆς τοιαύτης ἕξεως ἐκ διαφανοῦς. By *τοιαύτης* is meant the condition of active operation as such (*ἐνέργεια*, cf. 418 b 9): *ἐκ διαφανοῦς* is attached to *στέρησις* to denote the absence of this condition from the transparent. The exact force of the preposition is seen from 417 a 31 *ἐξ ἐναντίας μεταβαλὼν ἕξεως*, *ib.* a 32 *ὁ δ' ἐκ τοῦ ἔχειν τὴν αἴσθησιν ἢ τὴν γραμματικήν, μὴ ἐνεργεῖν δέ*, *ib.* b 9 *τὸ μὲν οὖν εἰς ἐντελέχειαν ἄγον ἐκ δυνάμει ὄντος*, and b 12 *τὸ δ' ἐκ δυνάμει ὄντος μανθάνον*, where a change from a former state is meant. Here, too (418 b 19), the construction is the same, *στέρησις* being regarded as (417 b 15) *ἡ ἐπὶ τὰς στερητικὰς διαθέσεις μεταβολή*.

b 20. ἡ τούτου παρουσία: obviously for *ἡ τῆς τοιαύτης ἕξεως παρουσία.* See *note* on 418 a 17 *ἑκάστου.* **Ἐμπεδοκλῆς, οὐδ' εἴ τις ἄλλος.** More fully *De Gen. et Corr.* I. 8, 324 b 26 *τοῖς μὲν οὖν δοκεῖ πάσχειν ἕκαστον διά τινων πόρων εἰσιόντος τοῦ ποιοῦντος ἐσχάτου καὶ κυριωτάτου, καὶ τοῦτον τὸν τρόπον καὶ ὁρᾶν καὶ ἀκούειν ἡμᾶς φασὶ καὶ τὰς ἄλλας αἰσθήσεις αἰσθάνεσθαι πάσας, ἔτι δὲ ὁρᾶσθαι διά τε ἀέρος*

καὶ ὕδατος καὶ τῶν διαφανῶν, διὰ τὸ πόρους ἔχειν ἀοράτους μὲν διὰ μικρότητα, πυκνοὺς δὲ καὶ κατὰ στοῖχον, καὶ μᾶλλον ἔχειν τὰ διαφανῆ μᾶλλον. οἱ μὲν οὖν ἐπί τινων οὕτω διώρισαν, ὥσπερ καὶ Ἐμπεδοκλῆς, οὐ μόνον ἐπὶ τῶν ποιούντων καὶ πασχόντων ἀλλὰ καὶ μίγνυσθαί φησιν ὅσων οἱ πόροι σύμμετροι πρὸς ἀλλήλους εἰσίν. Visible bodies, according to Empedocles (cf. Plato, *Meno* 76 C), give off emanations which enter the pores of the eye. Light, if visible, must be such an emanation from the sun and stars. In vision the visual ray was supposed to issue forth from the eye in order to come in contact with the emanations of the object. Empedocles thus compared the eye to a lantern (see *frag.* 84 D, *De Sensu* 2, 437 b 26 sqq.). The fire in the centre of the eye, the pupil, or lens, is surrounded by membranes or coatings, and darts out through these membranes and the watery part of the eye, presumably to meet the emanations of luminous bodies. See Theophr. *De Sensibus* §§ 7, 8 (*Doxogr. Gr.* 500, 19—501, 11). Empedocles, then, held light to be a corpuscular emanation from luminous bodies, which had to travel over the intervening space before it reached the eye. Thus sunlight traversed the space between the sun and the earth before it could reach the earth: *De Sensu* 6, 446 a 26 sqq. cited *infra* in *note* on b 22, **γιγνομένου**; also *ib.* 3, 440 a 15 sqq. To the same effect Philop. (344, 34) Ἐμπεδοκλῆς, ὃς ἔλεγεν ἀπορρέον τὸ φῶς σῶμα ὂν ἐκ τοῦ φωτίζοντος σώματος. In εἴ τις ἄλλος Philop. (345, 11) sees a reference to Plato *Tim.* 58 C. The view of the Atomists, which postulates motion of the corpuscular emanation, if not of light, will occupy us below, 419 a 15.

b 21. εἴρηκεν, ὡς φερομένου τοῦ φωτός, "has said that light travels"; the construction of ὡς with the genitive absolute after a verb of saying is very common. More is told us of this view in *De Sensu* 6, 446 a 26 sqq., which I translate. A. asks if the perception of the visible and of light agrees with the perception of other sensibles, viz. in being gradually transmitted from one point of space to another, and then continues: "Empedocles, for instance, says that the light from the sun reaches the intervening space before it reaches the eye or the earth. And this might well seem to be the fact. For, when a thing is moved, it is moved from one place to another, and hence a certain time must elapse during which it is being moved from the one place to the other. But every period of time is divisible. Hence there was a time when the ray was not yet seen, but was being transmitted through the medium." A. of course rejects this theory: see *De Sensu* 6, 446 b 27. Light is to him not a κίνησις κατὰ τόπον or φορά, but an ἀλλοίωσις, a qualitative change, of the transparent medium.

b 22. γιγνομένου. With Torstrik and Diels (*Vors. Fr.* 170, 38) I adhere to the vulgate, although τεινομένου, the reading of E, is supported by V and vet. transl. Cf. Them. 60, 28 H., 111, 6 Sp. ὡς κινουμένου τοῦ φωτὸς καὶ γινομένου πρῶτον μεταξὺ τῆς γῆς, εἶθ' οὕτω πρὸς τὴν γῆν, which is very similar to the citation from *De Sensu* below, Philop. 344, 34 ὃς [Empedocles] ἔλεγεν ἀπορρέον τὸ φῶς σῶμα ὂν ἐκ τοῦ φωτίζοντος σώματος γίνεσθαι πρῶτον ἐν τῷ μεταξὺ τόπῳ τῆς τε γῆς καὶ τοῦ οὐρανοῦ. The confusion of Τ and Γ in uncial MSS. is notorious. The difficulty of understanding τεινομένου is increased by the juxtaposition of ποτέ. This appears from the parallel passage *De Sensu* 6, 446 a 25—b 2 which serves as a commentary on the present passage: ἆρ' οὖν οὕτω καὶ τὸ ὁρώμενον καὶ τὸ φῶς; καθάπερ καὶ Ἐμπεδοκλῆς φησὶν ἀφικνεῖσθαι πρότερον τὸ ἀπὸ τοῦ ἡλίου φῶς εἰς τὸ μεταξὺ πρὶν πρὸς τὴν ὄψιν ἢ ἐπὶ τὴν γῆν. δόξειε δ' ἂν εὐλόγως τοῦτο συμβαίνειν· τὸ γὰρ κινούμενον κινεῖταί ποθέν ποι, ὥστ' ἀνάγκη εἶναί τινα καὶ χρόνον ἐν ᾧ κινεῖται ἐκ θατέρου πρὸς θάτερον. ὁ δὲ χρόνος πᾶς διαιρετός, ὥστε ἦν ὅτε οὔπω ἑωρᾶτο ἀλλ' ἔτ' ἐφέρετο ἡ ἀκτὶς ἐν τῷ μεταξύ. Cf. A.'s reply 446 b 27 τῷ εἶναι γάρ

τι φῶς ἐστίν, ἀλλ' οὐ κίνησις. ὅλως δὲ οὐδὲ ὁμοίως ἐπί τε ἀλλοιώσεως ἔχει καὶ φορᾶς· αἱ μὲν γὰρ φοραὶ εὐλόγως εἰς τὸ μεταξὺ πρῶτον ἀφικνοῦνται (δοκεῖ δ' ὁ ψόφος εἶναι φερομένου τινὸς κίνησις), ὅσα δ' ἀλλοιοῦται, οὐκέτι ὁμοίως· ἐνδέχεται γὰρ ἀθρόον ἀλλοιοῦσθαι, καὶ μὴ τὸ ἥμισυ πρότερον, οἷον τὸ ὕδωρ ἅμα πᾶν πήγνυσθαι. These extracts lead us to expect that the word before *ποτὲ* should bear the meaning of *ἀφικνουμένου* or *ἀφιγμένου*: *γίγνεσθαι* certainly bears this meaning: possibly *τείνεσθαι* could also. Torstrik raised the interesting question whether *τεινομένου* was an Empedoclean word, "ut sit lux quasi *σειρὴ χρυσείη*." On the affirmative side M. Rodier cites Alex. Aphr., who, commenting upon Emped. *frag.* 84, 5 D, in *De Sensu* 2, 437 b 30 *ταναώτερον* [int. *πῦρ*], "finest or most subtle fire," remarks (23, 21 W) *ταναὸν δὲ τὸ πῦρ* [*φησί*] *τὸ διὰ λεπτότητα τεινόμενόν τε καὶ διεκπίπτειν διὰ τῶν πυκνῶν δυνάμενον*, Aet., *Plac.* VI. 14 (Diels, *Doxogr. Gr.* 405, 16) *φέρεσθαι μὲν γὰρ τὴν ὄψιν τεταμένην ὡς ἐπὶ τὸν χαλκόν, ἐντυχοῦσαν δὲ πυκνῷ καὶ λείῳ πληχθεῖσαν ὑποστρέφειν αὐτὴν ἐφ' ἑαυτὴν κτέ.* For *τείνεσθαι* of light see Jebb's *note* on *Ant.* 600 and *Phil.* 831; and of sound *Ant.* 124. When we consider the use of *τείνειν* and *ἐκτείνειν* with *μακρὰν* in tragedy (e.g. *μὴ τεῖνε μακράν, μακρὰν ἔτεινας, μακρὰν ἂν ἐξέτεινα* sim.) where it is practically a verb of motion, it would not be surprising if Empedocles used *τείνεσθαι*=*φέρεσθαι*. A. himself so uses *ἀποτείνεσθαι*, e.g. *De Sensu* 2, 438 a 25 *ἄλογον δὲ ὅλως τὸ ἐξιόντι τινὶ τὴν ὄψιν ὁρᾶν, καὶ ἀποτείνεσθαι μέχρι τῶν ἄστρων* (v. *Ind. Ar.* 86 b 60 s.v.): "and, speaking generally, that the eye should see by something issuing from it and that the visual ray should reach as far as the stars, is unreasonable."

b 22. ποτὲ. In *De Sensu* 6, 446 b 1 sqq. (cited in last *note*) A. says "there was a time when the ray was not yet seen, but was still on its way in the intervening space." Here he says that the sunlight travels and arrives at some time or other in the space between earth and heaven. **μεταξὺ τῆς γῆς καὶ τοῦ περιέχοντος.** The meaning of the word *μεταξὺ* must not be pressed. The light reaches the eye from the sun, moves from East to West, and this motion takes place *ἐν τῷ περιέχοντι*, "in that which surrounds or encircles." Περιέχον denotes here not, as in 404 a 10, 411 a 19, the circumambient air, but the sky, *Ind. Ar.* 581 a 22 de extremis mundi finibus, e.g. *De Caelo* III. 5, 303 b 12. According to Empedocles the world was surrounded by a hollow sphere or rather two hemispheres, the one bright, the other dark, see Plut., *Plac.* II. 11 (Diels, *Doxogr. Gr.* 339, 16).

b 23 παρὰ τὴν...24 τὰ φαινόμενα. Theory, λόγος, and facts, *φαινόμενα*, as in 414 a 24: also *De Iuvent.* 4, 469 a 23 *κατὰ μὲν οὖν τὰ φαινόμενα*,...*ib.* a 28 *κατὰ δὲ τὸν λόγον*, *De Sensu* 1, 436 b 7 *δῆλον καὶ διὰ τοῦ λόγου καὶ τοῦ λόγου χωρίς*. A. of course rejects the spatial motion of light (see *De Sensu* 6, 446 b 27 cited above), because to him light is not a *φορὰ* but an *ἀλλοίωσις* of the transparent medium.

b 26. μέγα λίαν τὸ αἴτημα. A quasi-proverbial expression. Cf. the oracle in Herodotus I. 66 *Ἀρκαδίην μ' αἰτεῖς; μέγα μ' αἰτεῖς· οὔ τοι δώσω.* Apparently *τὸ αἴτημα* is in apposition to *τὸ λανθάνειν*.

b 26 ἔστι δὲ...27 τὸ ἄψοφον. Philop. says (345, 17 sqq.: cf. Simpl. 134, 31—34) that this is because the admixture of any colour in the medium would prevent it from receiving colours in their purity. This principle, that the recipient must be neutral to the qualities it receives, is applied to all the senses in succession and to the mind (429 a 15—26).

b 28. τὸ ἀόρατον ἢ τὸ μόλις ὁρώμενον. There are many degrees of obscurity from twilight to total darkness. Cf. 425 b 20 sqq., 426 b 1 sq.

b 29. τοιοῦτον δέ, int. *σκοτεινόν*, "dusky," "obscure."

b 30. ἀλλ' ὅταν δυνάμει, int. *διαφανές*, i.e. the medium is potentially transparent when there is not present the necessary condition of its conversion from dark to light.

419 a 1. οὐ πάντα δέ. It must not be supposed however that light is in all cases the necessary condition that objects may be visible. It is only the condition in order that they may show their colour. Cf. Them. (61, 9 H., 112, 3 Sp.) *οὐ πάντα δὲ τὰ ὁρατὰ ἐν φωτὶ ὁρατά, ἀλλὰ τὸ μὲν οἰκεῖον ἑκάστου χρῶμα ἐν φωτὶ μόνον.* Some things, e.g. the phosphorescent objects about to be described, carry their own medium with them, enough to show brightness and be visible, but not enough to show colour. See also second *note* on a 7 *infra*.

a 3. τὰ πυρώδη φαινόμενα καὶ λάμποντα. A. here defines the class of visibles besides colours for which he has no name (418 a 27), namely things which present a fiery and luminous appearance.

a 5. κέρας. A similar account of such objects is given in *De Sensu* 2, 437 a 31 sqq.: (437 b 5) "for smooth objects glow normally in the dark,...the heads of certain fish, for instance, and the ink of the cuttle-fish."

a 7. ἄλλος λόγος. Philop. (348, 11) refers to the *De Sensu* for a statement to the effect that *πέφυκεν ὁ ἀὴρ ὑπὸ τοῦ λαμπροῦ φωτίζεσθαι, οἷά ἐστι τὰ οὐράνια.* But no such words occur in the *De Sensu*, and Bonitz, who (*Ind. Ar.* 99 a 12) refers to *De Sensu* 2, 437 b 5, has taken care to mark the reference as dubious.

a 7 νῦν δ'...9 ἄνευ φωτός. If, then, we exclude phosphorescent objects, which do not show colour in the dark, the relation between light and colour is this, that light is the indispensable condition in order that a colour or a coloured object may be seen. In this sense A. can say *De Sensu* 6, 447 a 11 *τὸ φῶς ποιεῖ τὸ ὁρᾶν.* Our next sentence explains how this is.

a 9 τοῦτο γὰρ ἦν...11 φῶς ἐστίν. It is the nature of colour to excite or stimulate the transparent medium, provided it is transparent in actuality, i.e. has been illuminated: for light is the actuality or positive determination of the transparent medium. When the transparent is not actualised, we have darkness, when it is actualised, we have light, and when the latter is the case colour can act upon the eye. **ἦν,** "is, as we saw," viz. 418 a 31—b 2.

a 11. τούτου, viz. of the whole theory that that which is seen in light is colour, and light is the active operation of a medium called the transparent. That such a medium is indispensable to account for light and vision is evidenced by the experiment now to be mentioned.

a 12. ἐπ' αὐτὴν τὴν ὄψιν, "on the organ of sight." Cf. 423 b 22 *ἐπὶ τοῦ ὄμματος...τὸ ἔσχατον.* The ambiguity noticed above (417 a 3) in the use of *αἴσθησις* for sense-organ as well as for faculty thus recurs in the case of *ὄψις*: cf. *Ind. Ar.* 553 b 51.

a 13. οὐκ ὄψεται. The subject, *ὁ ὁρῶν*, is not expressed. Cf. *note* on 403 a 22. **ἀλλά,** "in fact," used simply because of the negative *οὐκ ὄψεται* preceding.

a 14. συνεχοῦς, "continuous." This excludes not only the hypothesis of Democritus, next criticised, but also that of Empedocles, who held that light or, as he called it, "fire" made its way through the intervening air and entered the organism by the pores. Cf. Plato, *Meno* 76 C, D. This condition of continuity justifies us in calling the transparent a medium.

a 15. Δημόκριτος. Democritus explained the perceptions of sight, as Empedocles did, by the hypothesis that emanations or films (**δείκελα**) fly off from visible things, which emanations retain the form of the things; these images are reflected in the eye and are thence diffused throughout the whole body; thus arises vision. But as the space between the objects and our eyes is

filled with air, the images that fly off from things cannot themselves reach our eyes; what does so is the air which is moved by the images as they stream forth and receives an impression of them. Therefore it is that the clearness of the perception decreases with distance, the image is blurred, and, as at the same time emanations are going out from our eyes, the image of the object is also modified by these. Cf. *De Sensu* 2, 438 a 5 sqq., Theophr. *De Sensibus* 50 (Diels, *Doxogr. Gr.* 513, 17) ὁρᾶν μὲν οὖν ποιεῖ τῇ ἐμφάσει· ταύτην δ' ἰδίως λέγει· τὴν γὰρ ἔμφασιν οὐκ εὐθὺς ἐν τῇ κόρῃ γίνεσθαι, ἀλλὰ τὸν ἀέρα τὸν μεταξὺ τῆς ὄψεως καὶ τοῦ ὁρωμένου τυποῦσθαι συστελλόμενον ὑπὸ τοῦ ὁρωμένου καὶ τοῦ ὁρῶντος· ἅπαντος γὰρ ἀεὶ γίνεσθαί τινα ἀποῤῥοήν· ἔπειτα τοῦτον στερεὸν ὄντα καὶ ἀλλόχρων ἐμφαίνεσθαι τοῖς ὄμμασιν ὑγροῖς· καὶ τὸ μὲν πυκνὸν οὐ δέχεσθαι τὸ δ' ὑγρὸν διιέναι and Alex. *De Sensu* 124, 6 W τῆς δ' αὐτῆς δόξης καὶ Δημόκριτός ἐστι καὶ πάντες καθ' οὓς ἀπὸ τῶν ὁρατῶν ἀποῤῥέον τι φέρεται πρὸς τὴν ὄψιν.

a 16. εἰ γένοιτο κενόν, i.e. if the air, which in fact fills the space intervening between the eye and a visible object, were removed. Greater clearness of perception would then be attainable, because the emanations from objects (δείκελα) would not be obstructed in their course, but would reach the eye directly. As it is, according to Democritus (see last *note*), they are liable to disintegration or distortion after they fly off from the surface of the visible object, and besides do not themselves reach the eye at all.

a 17 πάσχοντος γάρ τι...18 τὸ ὁρᾶν. An instructive remark, affording a summary explanation of the Aristotelian theory of sense-perception. For πάσχοντός τι compare 416 b 33, where it is stated of perception generally that it occurs ἐν τῷ κινεῖσθαί τε καὶ πάσχειν. In the case of vision the action of the visible object upon the faculty is not direct and immediate, hence we are bound to assume a medium.

a 21. οὐχ ὅτι. A well-known idiom, best explained as οὐ (λέγω) ὅτι ἀκριβῶς (ὀφθήσεται). Here οὐχ ὅτι puts the case aside: we shall not see the object at all, *a fortiori* we shall not see it exactly.

a 22 δι' ἣν μὲν οὖν...23 εἴρηται, viz. because action upon the sensitive organ is a necessary condition of sensation; visible colour cannot directly act upon the organ, but only through a medium, and this medium actively operant is light; cf. 419 a 17 sqq.

a 23. πῦρ. This constitutes a third class of visible objects. Philop. (348, 10 sqq.) points out that the sun, as the source of daylight, constitutes a fourth class. Like colours, the sun cannot be seen in the dark, but for a different reason. Colours cannot be seen without daylight; the sun cannot be seen in the dark because where he is, it is not dark, and where it is dark, there he is not! Cf. Simpl. 129, 3 sqq. who first enumerates visible objects and then rearranges thus, (1) light, (2) coloured objects, (3) phosphorescent objects, (4) fire and sunlight.

a 25. ὁ δ' αὐτὸς λόγος, "of sound and of smell the same may be said as of sight." There is no direct contact of the object perceived with the sense-organ. The object sets in motion an appropriate medium, which in turn acts upon the sense-organ.

a 26. ποιεῖ τὴν αἴσθησιν. Cf. 417 a 4, 419 a 3, 30, 422 a 17. Unless it does this, the sensible object is only δυνάμει αἰσθητόν, as indeed αἰσθητὰ always are, except in actual sensation. A. has clearly laid this dowh, 431 b 24—26, and we are reminded of the statements in *Metaph.* that most so-called substances are potentialities (1040 b 5 sq.), that particular sensible substances cannot be defined or brought under demonstration owing to the contingent element of matter in them (1039 b 27 sqq.), and that their very existence becomes problem-

atic so soon as they pass out of sensation (1040 a 2 sqq., 1036 a 5—9). Thus as αἰσθητικὸν to αἴσθησις, so the potential αἰσθητὸν to the actual ποίησις τῆς αἰσθήσεως. Cf. Beare, *Greek Theories*, p. 63.

a 30. περὶ δὲ ἁφῆς καὶ γεύσεως. In the case of touch and of taste it might appear as if there were immediate contact. But, as we shall see (in cc. 10 and 11), this is not so; there is a medium in the case of these senses also, namely flesh.

a 31. οὐ φαίνεται δέ is concessive, "although it does not appear so." **ὕστερον ἔσται δῆλον,** see 422 b 34 sqq.

a 32. κοινὸν γὰρ δή τι πάθος, "a common property." Above (418 b 8) he had called the transparent φύσις: cf. *De Sensu* 3, 439 a 21 οὐκ ἔστιν ἴδιον ἀέρος ἢ ὕδατος οὐδ' ἄλλου τῶν οὕτω λεγομένων σωμάτων, ἀλλά τις ἔστι κοινὴ φύσις καὶ δύναμις, ἣ χωριστὴ μὲν οὐκ ἔστιν, ἐν τούτοις δ' ἔστι, καὶ τοῖς ἄλλοις σώμασιν ἐνυπάρχει.

419 b 3. ὕστερον, 421 b 13—422 a 6. The commentators call this medium of smell τὸ δίοσμον. As Them. (62, 31 sq. H., 115, 2 sq. Sp.) informs us, A. himself does not use this term any more than τὸ διηχὲς for the medium of hearing. They are said to have been first applied by Theophrastus.

CHAPTER VIII.

A. gives the second place to the sense of hearing. His treatment, though by no means exhaustive, is far more complete than in the preceding chapter; consequently in *De Sensu* c. 4, 440 b 27 sq. he virtually admits that he has nothing to add with regard to sound, the object of hearing, and so passes at once from the consideration of colours to that of odours and flavours, although the sense of hearing receives some attention in *De Sensu*, cc. 6 and 7. Our present chapter defines the sensible object, deals with the medium and incidentally with the organ, so far as this can be done without detailed physiological examination. After a short notice of the fundamental qualities of sound, the high or shrill, ὀξύ, and the low or deep, βαρύ, A. proceeds to discuss vocal sound and the mode of its production in living beings. Throughout, the discussion implies what is more distinctly stated, *De Sensu* 6, 446 b 30, that sound is φερομένου τινὸς κίνησις: but A. does not here explain how the conceptions of φορὰ and ἀλλοίωσις should be combined.

419 b 4—420 a 2. Sound, that is, actual sound, is due to the concussion of two or more solid bodies and the communication of the shock to the air. Not all bodies, however, produce sound, but only such as are hard and smooth, or hollow bodies which reverberate when struck. The medium of sound is air or water, but the medium is not the determining cause of sound [§§ 1, 2]: there must be a concussion of hard bodies with each other and with the air, the blows following one another so rapidly and violently that the air shall not have time to disperse gradually [§ 3]. If the air be bounded and enclosed, being unable to find an escape, it reverberates and produces an echo. As a fact, in every case of sound there is some echo, but often this is indistinct; just as light is everywhere reflected or refracted, though as a rule not enough to throw a shadow [§ 4]. If by a vacuum we mean the air, it is correct to say that a vacuum is a determining condition of hearing. Air must, in order to communicate sound, be in one continuous mass. Soft bodies, like sponges, wool, etc., emit no sound, nor do hard bodies if they come in contact gradually

(for then the air succeeds in getting away). Hence the conditions required: sonant bodies must be hard, not soft, with interspaces through which the air may escape, and smooth, not rough, with hollows that may serve as retreats for the air [§ 5].

419 b 5. ψόφος. Cf. *De Caelo* II. 9, 291 a 9 *ὅσα μὲν γὰρ αὐτὰ φέρεται, ποιεῖ ψόφον καὶ πληγήν· ὅσα δ' ἐν φερομένῳ ἐνδέδεται ἢ ἐνυπάρχει, καθάπερ ἐν τῷ πλοίῳ τὰ μόρια, οὐχ οἷόν τε ψοφεῖν, οὐδ' αὖ τὸ πλοῖον, εἰ φέροιτο ἐν ποταμῷ. καίτοι τοὺς αὐτοὺς λόγους ἂν ἐξείη λέγειν, ὡς ἄτοπον εἰ μὴ φερόμενος ὁ ἱστὸς καὶ ἡ πρύμνα ποιεῖ ψόφον πολὺν τηλικαύτης νεώς, ἢ πάλιν αὐτὸ τὸ πλοῖον κινούμενον. τὸ δ' ἐν μὴ φερομένῳ φερόμενον ποιεῖ ψόφον· ἐν φερομένῳ δὲ συνεχὲς καὶ μὴ ποιοῦντι πληγὴν ἀδύνατον ψοφεῖν. ὥστ' ἐνταῦθα λεκτέον ὡς εἴπερ ἐφέρετο τὰ σώματα τούτων εἴτ' ἐν ἀέρος πλήθει κεχυμένῳ κατὰ τὸ πᾶν εἴτε πυρός, ὥσπερ πάντες φασίν, ἀναγκαῖον ποιεῖν ὑπερφυᾶ τῷ μεγέθει ψόφον, τούτου δὲ γινομένου καὶ δεῦρ' ἀφικνεῖσθαι καὶ διακναίειν. ὥστ' ἐπείπερ οὐ φαίνεται τοῦτο συμβαῖνον, οὔτ' ἂν ἔμψυχον οὔτε βίαιον φέροιτο φορὰν οὐθὲν αὐτῶν*, where A. is discussing the Pythagorean theory of the harmony (*συμφωνία*) of the spheres. **ὁ μὲν γὰρ ἐνεργείᾳ τις, ὁ δὲ δυνάμει.** To transform this into a grammatical sentence, we must supply *ὢν ψόφος ἐστὶ* after *τις* and *δυνάμει*, but the fact is that the two datives *ἐνεργείᾳ* and *δυνάμει* after being used repeatedly as adverbs with the participle *ὤν*, have come to be virtually indeclinable adjectives.

b 6. ἔχειν ψόφον, a frequent variation of *παρέχειν ψόφον*, which is itself equivalent to *ψοφεῖν* or *ψοφητικὰ εἶναι*. Cf. b 7 *infra ὅτι δύναται ψοφῆσαι* and 425 b 29 *τὸ ἔχον ψόφον οὐκ ἀεὶ ψοφεῖ*. So *ἔχειν ὀσμὴν* 421 b 7 sq., *χυμὸν* 422 a 30, 424 a 22 sq. The sound or odour or flavour, if regarded simply as the power to stimulate sense, resides in the external thing.

b 7. δύναται. Beyond this remark there is no further allusion to sound potential. We confine ourselves to sound actual. The distinction is brought up again 425 b 26—426 a 8.

b 8. τοῦτο δ' ἐστίν, "that is to say"; the words *αὐτοῦ μεταξύ...9 ἐνεργείᾳ* being substituted for *ψοφῆσαι*. Cf. Them. 63, 7 H., 115, 21 Sp. *ψοφεῖ δέ, ὅταν δύνηται ἑαυτοῦ μεταξὺ καὶ τῆς ἀκοῆς ἐμποιῆσαι τὸν κατ' ἐνέργειαν ψόφον.* **αὐτοῦ**, the sonorous object itself. Them. paraphrases it by *ἑαυτοῦ*. Cf. *note* on 417 b 6, *εἰς αὐτό.* **τῆς ἀκοῆς**, "the organ of hearing"; just as *ὄψις* was used for the eye, 419 a 13. So far A. appears to deal with sound and hearing from the side of the object, i.e. of sound.

b 9. γίνεται δ'. The object of hearing, sound, as compared with the object of sight, colour, is complex. It involves three material conditions: a thing that strikes, a thing that is struck, and a medium. What is heard is the sound of something (*τινὸς*) striking against something else (*πρός τι*) in a certain medium (*ἔν τινι*).

b 10. ἡ ποιοῦσα: by attraction for *τὸ ποιοῦν*, cf. 404 a 25 sq.

b 13. ὥσπερ δ' εἴπομεν, *supra* 419 b 6.

b 14. τῶν τυχόντων. Cf. 407 b 19, *note*.

b 16. τὰ δὲ κοῖλα. The construction is so far broken that instead of a subordinate causal clause, *τὰ δὲ κοῖλα* <*ὅτι*> *κτέ.*, we have a fresh main sentence (*τῇ ἀνακλάσει πολλὰς ποιεῖ πληγάς*), which really contains the reason why hollow bodies give sound, namely that there is a reverberation and multiplication of blows. Cf. 428 a 26 sq.

b 18. τοῦ κινηθέντος, int. *ἀέρος*. **ἔτι.** A. here passes on to consider the medium of sound. **ἀλλ' ἧττον.** These words, if retained, are parenthetical: int. *ἐν ὕδατι ἢ* [than] *ἐν ἀέρι.*

b 19. κύριος, "the determining condition." As three have been named,

that which strikes, that which is struck and the air (or water) in which it is struck, it is natural to ask which is the main condition, as daylight is for the visibility of coloured objects. The determining condition is pulsation of air intercepted in a confined space.

b 20. πρὸς τὸν ἀέρα. Is this a second condition? When we come to read *διὸ ἐὰν ταχέως κτέ.* (b 22), it is plain that A. is thinking of an exceptional case where air itself is one of the bodies struck, as e.g. in the cracking of a whip. That the air in such cases is both the medium and the body struck is clearly recognised by Alex. Aphr. *De An.* 47, 18 *ἤδη δὲ καὶ* **μόνος** *ὁ ἀὴρ πληγεὶς πως ψόφον ποιεῖ*, Them. 63, 30 H., 116, 25 Sp. *τηνικαῦτα δὲ τοὺς δύο ἀναδέχεται λόγους ὁ ἀὴρ τόν τε τοῦ τυπτομένου σώματος καὶ τὸν τοῦ ἐν ᾧ τύπτεται.* Not much would be gained by the proposal to insert *ἢ* or to put a full stop after *ἄλληλα* and begin the next sentence with *καὶ πρὸς τὸν ἀέρα τοῦτο δὲ γίνεται.*

b 21. μὴ διαχυθῇ. The blows need to be smart and quick, or the air will disperse, and the sound in that case will be slight, or even too slight to be appreciable.

b 23. φθάσαι, "get a start of," "anticipate," "head off."

b 24 ὥσπερ ἂν εἰ σωρὸν...25 ταχύ. The rapidity and vigour of the stroke required if the dispersion of the air is to be effectually anticipated must be the point of the comparison. Philop. supposed the sand to be shot out of a funnel. The sand of itself would fall noiselessly upon the heap below, although it has a certain amount of solidity; and it is only by striking rapidly that any sound can be produced. (Air is thought to be *κενόν*, yet it has solidity in it. You take the exceptional case when you appear to have one body only: the second is air struck so rapidly that it has no time to escape.) But if this were the sense, it would surely be better to take *ταχὺ* with *τύπτοι* and not, as the order of the words would suggest, with *φερόμενον*. As Professor Beare points out (*Hermathena* XIII., p. 73 sq.) this explanation, like all hitherto offered, is quite inadequate. He himself gives the following most satisfactory explanation: "The *ὁρμαθὸς φερόμενος* is a 'revolving ring,' a sand-whirl, such as often appears in warm, sandy countries when a wind plays upon the sand in a certain way. A vortical motion occurs in the mass of sand, which arranges itself in a revolving ring, and, besides revolving on its centre, also moves onwards with a certain speed" (*φερόμενον ταχύ*). "These rings, which are of all sizes, are frequent in South Africa, and are vulgarly known as 'devils,' owing to their unwelcome effects when they happen to collide with and break over a traveller. The word *ὁρμαθὸς* is very well suited to designate a revolving ring of this kind. Hesychius gives *χορὸς* as the first meaning of *ὁρμαθός*; and indeed the revolving movement of a circle of dancers linked hand-in-hand well illustrates the rapid whirling of the eddy of sand or dust. Thus A. improves upon his first example *σωρόν*, which might or might not be in motion and which therefore here may or may not agree with *φερόμενον*, by adding *ἢ ὁρμαθόν*, which must of course move in order to exist. The object of the whole illustration is to enable one to 'envisage' more clearly what the writer supposes to take place in the sound-medium, the air, when the *πληγὴ* which causes sound is inflicted upon it....The rapid vortical motion constitutes the *raison d'être*, or rather the physical cause, of the *ὁρμαθός*, and is not an effect of the *πληγή*."

b 25. ἑνὸς γενομένου. The same idea as that suggested by *συνεχής*. The air is one continuum and not composed of adjacent particles with interspaces. The enclosed cavity is not empty: it has air already in it. For this reason that part of the air which has been pushed against the solid walls of the cavity must on finding no escape in that direction resist the impact of that part of the air

which has been set in motion from without. This latter part is not that which in the first instance received the concussion, but that to which the impact has been transmitted as it travelled along the continuum of air to the entrance of the cavity and even inside it.

b 27. πάλιν...ἀπωσθῇ. The idea of air being repelled and driven back from air, which has caused difficulty, is made intelligible if we adopt the explanation offered by Alex. Aphr., *De An.* 47, 25 *ὅταν γὰρ ὁ πληγεὶς ἀὴρ εἰς μείνας ἐνεχθεὶς ἐπί τι στερεὸν ἔχον τινὰ κοιλότητα ὑπὸ τοῦ ἀέρος τοῦ ὄντος ἐν τῷ κοίλῳ τούτῳ ἡνωμένου διὰ τὸ περιέχεσθαι καὶ μὴ θρυπτομένου ἀλλ' ἑνὸς μένοντος ἀπωσθῇ, διὰ τὴν βίαν ἐπὶ ταὐτὸν φέρεται ὅθεν ἠνέχθη. οὐ γὰρ κενῷ τῷ ἀγγείῳ προσπίπτει, ἀλλὰ ἀέρος πλήρει, ὑφ' οὗ διὰ τὸ συνέχεσθαι αὐτὸν ὑπὸ τοῦ ἀγγείου κωλυθεὶς εἰς τὸ πρόσω ἐνεχθῆναι ἢ θρυβῆναι, ἀπωσθεὶς εἰς τοὐπίσω πάλιν φέρεται ταχέως ἅτε εὐκίνητος ὢν τὸν αὐτὸν ἔτι φυλάσσων ψόφον.*

b 27. ὥσπερ σφαῖρα, i.e. like a ball rebounding from a wall. So the air can find no exit because the other air already massed in the closed cavity acts like a wall. Cf. Alex. Aphr., *De An.* 48, 7 *δύναται δὲ λέγεσθαι καὶ ὅτι οὐχ ὁ πρῶτος ἀὴρ πληγεὶς φέρεται ἐπὶ τὸ κοῖλον σῶμα καὶ τὸν ἐν τούτῳ ἀπειλημμένον ἀέρα καὶ πάλιν ἀπὸ τούτων εἰς ταὐτὸν ἀνακάμπτει (οὕτως γὰρ ἀντιπερίστασις ἂν γίνοιτο διπλῆ τοῦ μετὰ τὸν πεπληγότα ἀέρα καὶ φερόμενον αὐτῷ ἐπὶ τὸν κοῖλον τόπον ὑποχωροῦντος καὶ πάλιν ἀναστρέφοντος), ἀλλ' ὁ μὲν πρῶτος ἀὴρ πληγεὶς διὰ τὸ τάχος τῆς πληγῆς συνεχὴς καὶ ἀδιαίρετος μείνας τὸν μετ' αὐτὸν σχηματίζοι ἂν τῇ ὁμοίᾳ πληγῇ, καὶ οὗτος τὸν μετ' αὐτόν, καὶ οὕτως κατὰ συνέχειαν μέχρι τοῦ ἀγγείου ἡ πρόοδος τοῦ ψόφου κατὰ διάδοσιν γίνοιτ' ἄν, ὁ δὲ τελευταῖος ὁ πρὸς τῷ ἀγγείῳ πληγείς τε καὶ σχηματισθεὶς κωλυθεὶς εἰς τὸ πρόσω διαδοῦναι τὴν πληγὴν ὑπὸ τοῦ ἀγγείου, ἀνάπαλιν ὑπὸ τῆς τοῦ στερεοῦ ἀντιτυπίας ἀπωσθείς, ὡς σφαῖρα ἀπὸ στερεοῦ τινος, τὸν ἐπὶ τάδε αὐτοῦ πλήσσοι τε ἂν καὶ σχηματίζοι πάλιν.*

b 29. ἀνακλᾶται, is "refracted" or "reflected" (to use modern scientific terminology), according as the ray of light passes through, or is unable to penetrate, the obstacle.

b 33. ᾗ...ὁρίζομεν. The expression is inexact, as pointed out by Torstrik, who gives us the choice between *ᾗ τὸ φῶς ὁρίζεται,* "by which light is bounded," if A. is speaking of the fact, and *ᾧ τὸ φῶς ὁρίζομεν,* "by which" [viz. *τῷ σκιὰν ποιεῖν*] "we commonly define light." Them. (64, 4 H., 117, 13 Sp.), more exact than his author, writes: *ἡ ἀνάκλασις ἐκδηλοτέρα διὰ τὸ καὶ σκιὰν δύνασθαι ποιεῖν τὸ ἀποπαλλόμενον φῶς.* If *ὁρίζομεν* means "we define," cf. 405 b 11, 413 b 12, 427 a 17, 432 a 15, 435 b 16.

419 b 33—420 a 2. Does this section, we ask, refer distinctly to echo? Probably not, though Them. (64, 6 sqq. H., 117, 16 sqq. Sp.) tries to make the most of the connexion between smoothness and hollowness as the two conditions necessary for an audible echo.

b 33. τὸ δὲ κενὸν ὀρθῶς. The view that vacuum is a determining cause of hearing is, A. pronounces, correct, if correctly interpreted: that is, in so far as we accept the popular description of air as vacuum. Cf. *De Part. An.* II. 10, 656 b 14 *ἔχει δὲ καὶ τὴν ἀκοὴν εὐλόγως ἔνια τῶν ζῴων ἐν τῷ τόπῳ περὶ τὴν κεφαλήν· τὸ γὰρ κενὸν καλούμενον ἀέρος πλῆρές ἐστι, τὸ δὲ τῆς ἀκοῆς αἰσθητήριον ἀέρος εἶναί φαμεν.* Air, as we saw, is the cause of hearing, provided it be made to pulsate in one continuous mass. **κύριον τοῦ ἀκούειν.** Here air is the determining cause in hearing, *τοῦ ἀκούειν.* Above, 419 b 19, the question is whether it is *ψόφου κύριος.* A. recognises the fact that *ψόφος* and *ἀκοή* are the same in actual operation, but he distinguishes the one from the other. He insists on the importance of impact on the objective side and the presence of air in the ear on the subjective side.

b 34. δοκεῖ γὰρ εἶναι κενόν. The word *κενὸν* in A., as in the ordinary usage of Greek literature, denotes that which is empty of solid bodies, unoccupied by anything excepting air, and not, as with Democritus, absolute void or "vacuum." Cf. the Vergilian phrase "auras...inanes" (= auras...tenuis of *G.* IV. 499 sq.).

b 35. ψαθυρὸς. This word, which properly means "friable," "easily crumbling," of solids, is used in *De Sensu* 4, 441 a 25 of water as contrasted with the more viscid oil.

420 a 1. γεγωνεῖ. A mainly poetic word, used however by Xenophon and in the Socratic dialogue *Hippias Major* 292 D.

a 1. λεῖον. The similarity of the language in 435 a 5—8 and the final limiting clause there "provided the air be one, as it is in the case of a smooth body" render it probable that there A. has echoes as well as reflection of light in his mind. The use of λεῖον in this passage proves, if any proof were needed, that A. does not limit *ἐπίπεδον* to a flat surface or plane. The word used by the Pythagoreans to denote surface was *χροιά* (cf. *note* on 418 a 26, **ὁρατὸν δ'**), in Plato it is *ἐπίπεδον* only and in A. *ἐπίπεδον* is still in use, although he also employs the new word *ἐπιφάνεια*, which is never found in Plato in this sense. After Euclid's time *ἐπίπεδον* was limited to plane which in Archimedes is also expressed by *ἡ ἐπίπεδος* (int. *ἐπιφάνεια*). Heiberg, *Mathematisches zu Aristoteles*, p. 8, remarks: "Proclus *in Euclidem*, pp. 116, 17, observes that Plato and A. do not distinguish *ἐπίπεδον* and *ἐπιφάνεια*. Plato has only *ἐπίπεδον*, sometimes for surface (*Laws* 817 E, *Meno* 76 A, *Philebus* 51 C), sometimes for plane (*Theaetet.* 173 E, *Rep.* 528 A—D). A. is already acquainted with *ἐπιφάνεια* in the mathematical sense (*Phys.* IV. 1, 209 a 8, *Metaph.* 1020 a 14, 1060 b 15), but still uses *ἐπίπεδον* also for surface (*Top.* VI. 4, 141 b 7, 22, *De Caelo* I. 1, 268 a 8, *Metaph.* 1016 b 27) and both interchangeably, e.g. *Categ.* 6, 5 a 2 sqq. Once in Euclid *ἐπίπεδον* survives as surface, in a definition presumably derived from an earlier text book, though elsewhere Euclid sharply distinguishes the two terms, e.g. Def. 5 *ἐπιφάνεια δέ ἐστιν, ὃ μῆκος καὶ πλάτος μόνον ἔχει*, Def. 7 *ἐπίπεδος ἐπιφάνειά ἐστιν, ἥτις ἐξ ἴσου ταῖς ἐφ' ἑαυτῆς εὐθείαις κεῖται.* The latter definition, there is reason to think, originated with Euclid himself. These facts make against an assertion in Diog. Laert. III. 24 [Πλάτων] *πρῶτος ἐν φιλοσοφίᾳ... ὠνόμασε...τῶν περάτων τὴν ἐπίπεδον ἐπιφάνειαν.*" I am indebted to Dr T. L. Heath for my acquaintance with Heiberg's article.

a 2. ἅμα. The air is simultaneously unified at the very moment of impact, and this because of the nature of the surface, *διὰ τὸ ἐπίπεδον.*

420 a 3—b 4. That may be defined as sonorous which is capable of setting in motion air which reaches continuously to the organ of hearing. The movement in the external air is communicated to the air within the ear. The organ of hearing must be in that part of the body where air is confined; this air being motionless, the ear perceives accurately all the varieties of sound. We can hear in water, but if water reaches the inner ear hearing is hindered, as also when the membrane is injured. The air, i.e. the air in the ear, has, it is true, a motion of its own, indicated by the ringing in the ears. It is not by that, however, that we hear, but by the extraneous motion transmitted from the object [§ 6]. Both that which strikes and that which is struck contribute, though in different ways, to sound. But to ensure repercussion, the thing struck must be smooth and even [§ 7]. Sounds differ in pitch, and this difference is expressed by the terms acute and grave borrowed from tangible objects. The acute, whether to touch or to the ear, is not the same as the fast, nor the blunt or grave the same as the slow, but the acute, because of the fast

motion which it sets up, is itself incidentally fast, and similarly the blunt or grave is incidentally slow [§ 8].

420 a 3. συνεχεῖ qualifies ἑνός. Cf. *Phys.* I. 3, 186 a 28, *Metaph.* 1015 b 36 sq., 1016 b 7 sqq., and especially 1016 a 4 αὐτῶν δὲ τούτων μᾶλλον ἐν τὰ φύσει συνεχῆ ἢ τέχνῃ. συνεχὲς δὲ λέγεται, οὗ κίνησις μία καθ' αὑτὸ καὶ μὴ οἷόν τε ἄλλως, where unity of motion is made the test of continuity. Cf. *note* on 411 b 6.

a 4. συμφυής, "naturally continuous with." The contrast is between parts which are one because they have grown together, and parts connected simply by contact. A natural limb is συμφυής with the rest of the body, an artificial limb, though συνεχής, is not συμφυής. Cf. *Metaph.* 1014 b 22 διαφέρει δὲ σύμφυσις ἁφῆς· ἔνθα μὲν γὰρ οὐδὲν παρὰ τὴν ἁφὴν ἕτερον ἀνάγκη εἶναι, ἐν δὲ τοῖς συμπεφυκόσιν ἐστί τι ἓν τὸ αὐτὸ ἐν ἀμφοῖν, ὃ ποιεῖ ἀντὶ τοῦ ἅπτεσθαι συμπεφυκέναι καὶ εἶναι ἓν κατὰ τὸ συνεχὲς καὶ ποσόν, ἀλλὰ μὴ κατὰ τὸ ποιόν, and *De Sensu* 2, 438 a 29 τό τε γὰρ συμφύεσθαι τί ἐστι φωτὶ πρὸς φῶς; ἢ πῶς οἷόν θ' ὑπάρχειν; οὐ γὰρ τῷ τυχόντι συμφύεται τὸ τυχόν.

a 4. ἀήρ. I prefer this reading, which is more consistent with the language of A. elsewhere. Though it has slight support from the manuscripts, hardly any indeed, it is attested by the commentators. A. is speaking of the air enclosed (a 9 ἐγκατῳκοδόμηται) in the ear under the membrane of the tympanum. This air has grown together with, and become one with, the organ of hearing: as Torst. observes, "concrevit cum auditu." On the other hand, if we take the alternative reading ἀέρι, "the ear is συμφυής with the air," which air is meant, the air within the ear or the air outside? If the former, there is force in Torst.'s remark "ridiculum est dicere auditum concrevisse cum aere." If the latter (and Professor Beare, who adopts this reading, translates: "the organ of hearing proper is physically homogeneous with the air," l.c., p. 114), there seems no appropriateness in συμφυής, for the inner air and the outer air, though "physically homogeneous," have certainly not become so by natural growth; for συμφυής only applies in its proper sense to things which are qualitatively distinct and unlike, though they form a natural whole. Besides Philop. (364, 11, 365, 20), Simpl. (143, 22), Soph. (86, 25), we have the more valuable authority of Theophrastus as reported by Prisc. Lyd. (16, 22 ἀλλ' εἰ ὁ ἀὴρ συμφυής, τὸ δὲ ἀκούειν κτέ.), whose evidence is accepted by Professor Bywater *ad loc.* As to Them., it is true that he first paraphrases (64, 16 H., 117, 29 Sp.) ἀκοὴ δὲ συμφυὴς ἀέρι, but that this is the licence of paraphrase in wilful alteration is rendered exceedingly probable by the words immediately following: ἐγκατῳκοδόμηται... ἀὴρ...τῇ μήνιγγι συμφυής and (64, 28 H., 118, 17 Sp.) γίνεται γὰρ ὥσπερ μεθόριον ὁ τῇ μήνιγγι συμφυὴς ἀὴρ τοῦ τε εἴσω πνεύματος τοῦ αἰσθητικοῦ καὶ τοῦ ἔξωθεν ἀέρος. Cf. 65, 16 sq. H., 119, 26 Sp. See also Bon. *Ind. Ar.* 720 a 11.

a 4. διὰ δὲ τὸ ἐν ἀέρι εἶναι. The commentators supply τὴν ἀκοήν, and so I have translated. But it would seem more natural to regard τὸ κινητικὸν...ἀκοῆς as the subject, the sonorous body as such. A. in various passages expressly declares the organ of hearing to consist of air (425 a 4, *De Sensu* 2, 438 b 20, *De Part. An.* II. 10, 656 b 16 sq., *De Gen. An.* V. 2, 781 a 23 sq.) and such a view is in full accord with the whole tenor of the present discussion, 419 b 8, 419 b 33—420 a 19. But it seems to me impossible that, if the organ proper is of air (ἀέρος εἶναί φαμεν, 656 b 17), it should also be said to be in air. The external ear, Empedocles' σάρκινος ὄζος, is in air no doubt, but so is the eye and the whole body, and it is not with the external ear that we hear. Them. must have felt this difficulty, for, as cited in the last note, he sometimes substitutes ἡ μῆνιγξ. But is the membrane of the tympanum really the organ? If, however, my suggestion be taken, all that needs to be assumed is that A. confines his

attention, as usual, to the normal case of sonorous bodies in the air, and regards hearing in the water as an exception. The conjecture of Steinhart, *διὰ τὸ ἕνα ἀέρα εἶναι*, has the great merit of avoiding the difficulty of the traditional interpretation, and it is adopted by Professor Beare, who translates thus (l.c., p. 114): "Since then the air is one, it follows that, when the outer air is moved, the inner air is moved also."

a 6. τὸ κινησόμενον μέρος καὶ ἔμψυχον, i.e. the part that is to be affected (by sound). Since perception implies movement, *κινησόμενον* here is equivalent to *αἰσθησόμενον*. We might have expected *τὸ ἔμψυχον ζῷον* as subject. But the animal does not hear in all parts of the body (a 6) and, if hearing were possible at any other part of the body than the ear, that part would be an *ὄργανον*. The text substitutes a description of *ὄργανον* for the word *ὄργανον* itself.

a 8. ᾗ τούτου, i.e. *ᾗ τοῦ θρύπτεσθαι κωλυθέντος ἀέρος*.

a 9. ἐγκατῳκοδόμηται, "is lodged deep down," "immured."

a 10. ἀκίνητος. This word does not mean that the air within the ear is absolutely motionless; for not only is the communication of motion to it from without the cause of hearing, but Aristotle expressly says below (a 16) that it has an intrinsic motion of its own. It is necessary to his theory that the air in the ear should not be dislodged and that it should be relatively at rest, in the same sense as a lake when compared with the running water of a river. It will then be better able to receive the motions which it is its function to receive. Cf. Them. 65, 13 sqq. H., 119, 22 sqq. Sp. Similarly mind is *ἀπαθής* (429 a 15) in order that it may more perfectly "suffer," *πάσχειν*, i.e. receive *πάθη* from without.

a 11. τῆς κινήσεως, "of the movement," int. *τῆς ψοφητικῆς*, "the movement which conditions sound." **διὰ ταῦτα**, i.e. the position of this internal air well covered up and protected.

a 12. πρὸς αὐτὸν τὸν συμφυῆ ἀέρα, "right up to the air which is in and part of" the ear. Note that Aristotle looks upon the ear as consisting of bone, membrane, convolutions and the air contained, exactly as he recognises water as a constituent part of the eye-ball, and as anyone would count the air in a drum as an essential part of the drum.

a 13. ἕλικας, the spiral convolutions of the inner ear, often called the labyrinth. The word is applied to mathematical spirals, e.g. to those described by the heavenly bodies *Metaph.* 998 a 5.

a 14. τὸ ἐπὶ τῇ κόρῃ δέρμα, the cornea, which Simpl. describes (144, 29) as *ὁ κερατοειδὴς λεγόμενος χιτών*.

a 16. ὥσπερ τὸ κέρας: the musical instrument. A more familiar instance is that of spiral shells, which, like the horn, ring when held to the ear. The ear is active, the organ is in its healthy, normal condition when, if the hand be put over it, a murmur is heard like that proceeding from a shell. **ἀεί**, "perpetually." Such inner movement is always going on. As Them. says (65, 18 H., 119, 28 Sp.) *διὸ καὶ ἠχεῖ τὸ οὖς ἀεὶ ὑπὸ τῆς τοιαύτης* [int. *τῆς οἰκείας*] *κινήσεως*. We are only aware of it when we apply the test.

a 17. ἀλλ' ὁ ψόφος ἀλλότριος. Sound which we hear comes in from without and does not belong to the ear itself, and is not, like the ringing just mentioned, due exclusively to the ear.

a 18. τῷ κενῷ καὶ ἠχοῦντι. A popular description of the ear: presumably one and the same organ is intended, which is (*a*) empty, (*b*) resonant. A. goes on to show that his theory satisfies these conditions if by "resonant" we understand the air enclosed (*ὡρισμένον*) within the ear, and by "empty" an organ which contains within it nothing but air. It should be remembered, as

mentioned above (*note* on 420 a 12), that the organ of hearing is to him the ear with the interior air in it, ὁ συμφυὴς ἀήρ. Here ἠχοῦντι better suits the enclosed air, κενῷ the cavity of bone, membrane, and convolutions.

a 19. ὡρισμένον. Probably "delimited" or "circumscribed." Against this interpretation Simpl. (145, 29) raises the objection that the same thing will apply to the external air, and prefers to explain "air of a definite character" τῷ ζωτικῷ ἤχῳ χαρακτηριζόμενος. This seems over subtle, though it is no doubt true that the air confined within the ear will remain ὡρισμένος καὶ ὁ αὐτὸς when it ceases by its peculiar motion to produce the murmur which is the evidence of its vital activity. But this point A. could afford to neglect when adjusting the popular saying to his theory.

a 20. ἢ καὶ ἄμφω. This is Aristotle's own solution.

a 23. ὅταν τις κρούσῃ. With κρούσῃ should probably be understood τὰ ἀφαλλόμενα, the objects which rebound (such as tennis balls and the like). It is just possible to understand τὰ λεῖα τῇ σφαίρᾳ, on the analogy of τοῖς ποσὶ τὴν γῆν κρούειν. Them. (65, 31 H., 120, 17 Sp.) calls attention to the inadequacy of the illustration because the ball is not continuous with the surface against which it strikes and from which it rebounds: οὐδὲ τὸ παράδειγμα ᾧ κέχρηται Ἀριστοτέλης πάντῃ ἔοικε· φησὶ γὰρ τὸν ψόφον εἶναι κίνησιν τοῦ δυναμένου κινεῖσθαι τὸν τρόπον τοῦτον, ὃν τὰ ἀφαλλόμενα ἀπὸ τῶν λείων, ὅταν τις κρούσῃ. τὰ μὲν γὰρ ἀφαλλόμενα χωρίζεται ὧν ἀφάλλεται, ὁ δὲ πρώτως ψοφήσας ἀὴρ οὐκ αὐτὸς ἀφάλλεται ἐπὶ τὴν ἀκοήν. I append a supplementary note by my friend Miss Alford: "I think the object is τὰ λεῖα. The noise is the movement of a portion of air which being συνεχὴς καὶ εἷς has the power to leap back from the surface as a ball (or a tea-cup) leaps off from a tea-tray when the fist is brought down on the tray. That which leaps off is, like the air in most cases of hearing, neither τὸ τύπτον nor τὸ τυπτόμενον but a third thing. Themistius objects that the air which produces the sound does not as one whole leap off from the surface struck and pass across and strike on the air in the ear. That portion of air which begins the production of the sound ὁ πρώτως ψοφήσας (being that which rested on the surface struck and leaps off from it like the ball) sets in motion successive portions of air comparable to waves, of which the last strikes on the air in the ear and directly produces the sound heard." **ὥσπερ εἴρηται,** cf. *supra* 419 b 13 and 419 b 6 there referred to.

a 25. ἀθροῦν. In this term are summed up the conditions denoted above by συνεχὴς καὶ εἷς (419 b 35) or εἷς συνεχείᾳ (420 a 3) and ὡρισμένος (420 a 19), in the absence of which the air, when struck, disperses, so that no sound results.

a 26. αἱ δὲ διαφοραὶ τῶν ψοφούντων. Cf. διαφοραὶ τῆς κινήσεως 420 a 10 sq. Other qualities of vocal sound are, e.g., loudness, harshness and their opposites, 422 b 29 sqq. The quality of pitch is here attributed to the object which emits the sound.

a 29. ταῦτα, i.e. τὸ ὀξὺ καὶ τὸ βαρύ. **κατὰ μεταφοράν.** I have found it impossible to preserve this metaphor in the translation. We do indeed talk of acute sounds and of sharp and flat notes; but the proper way of indicating in modern English the musical quality called pitch is by a different metaphor.

The analogy is so far faulty that, whereas here the opposite of ὀξὺ is given as βαρύ, below where A. is speaking of touch, it is ἀμβλὺ (cf. *Prob.* XIX. 8, 918 a 19), and, while βαρὺ was obviously the proper and usual term for a low or deep voice in Greek, ἀμβλὺ alone really suits the metaphor from touch. The truth would seem to be that it is only ὀξὺ which can be said to have been applied to sounds by analogy from touch, meaning "shrill" or "piercing" or "acute."

a 30 τὸ μὲν γὰρ ὀξὺ...420 b 4 εἶναι. In this obscure passage there is reason to believe that A. is thinking of a Pythagorean definition and tacitly correcting the words of Plato in *Tim.* 67 B *ὅλως μὲν οὖν φωνὴν θῶμεν τὴν δι' ὤτων ὑπ' ἀέρος ἐγκεφάλου τε καὶ αἵματος μέχρι ψυχῆς πληγὴν διαδιδομένην, τὴν δὲ ὑπ' αὐτῆς κίνησιν, ἀπὸ τῆς κεφαλῆς μὲν ἀρχομένην, τελευτῶσαν δὲ περὶ τὴν τοῦ ἥπατος ἕδραν, ἀκοήν·* **ὅση δ' αὐτῆς ταχεῖα, ὀξεῖαν, ὅση δὲ βραδυτέρα, βαρυτέραν·** *τὴν δὲ ὁμοίαν ὁμαλήν τε καὶ λείαν, τὴν δὲ ἐναντίαν τραχεῖαν· μεγάλην δὲ τὴν πολλήν, ὅση δὲ ἐναντία, σμικράν.* Cf. 80 A, B *ὅσοι φθόγγοι ταχεῖς τε καὶ βραδεῖς ὀξεῖς τε καὶ βαρεῖς φαίνονται κτέ.* According to Plato, voice, the object of hearing, is a shock transmitted to brain and blood by the air through the ears, and reaching the soul (cf. *note* on 408 b 15). The "motion" which this shock or blow sets up is hearing. Obviously, then, Plato's *κίνησις* is A.'s *αἴσθησις* of 420 a 30, since both terms refer to actual hearing. A. appears from his criticism to have understood the next sentence to mean "so much of sound as is rapid, let us call shrill, so much as is slower, deeper or of lower pitch." And in 80 A Plato certainly says that swift and slow sounds appear shrill and deep. In the *Topics* (I. 15, 107 a 15) A. quotes a Pythagorean definition of shrill or high-pitched sound: *φωνὴ μὲν γὰρ ὀξεῖα ἡ ταχεῖα, καθάπερ φασὶν οἱ κατὰ τοὺς ἀριθμοὺς ἁρμονικοί.*

A.'s own view appears to be that of Theophrastus, *De Musica, frag.* 89, viz. that there is a natural difference between one vocal sound and another, quite irrespective of the mode of production and of any mathematical relations which this mode of production involves. The characteristic of the shrill or high note, as compared with the deep or low one, A. explains by the analogy of the tangible quality of sharpness. What is sharp, as it were, stabs; the sensible impression is rapid and deep, if these metaphorical terms may be allowed; and the same thing is true of the shrill sound or high note, it also makes a deep impression on the ear in a very little time, whereas the impression of the deep voice as heard is assimilated to that of the slower thrust of a blunt instrument. The description may not be very accurate, but at all events it aims at establishing simple, ultimate, unanalysable differences between sounds as heard. The high note, says Theophr., can be heard at a greater distance than the low note. The ear apprehends it because of its distinctive quality, *διὰ τὴν ἰδιότητα, οὐ διὰ τὸ ἐν αὐτῷ πλῆθος.* Nor does the high note surpass the low note in speed of transmission: if that were the case, a chord would be impossible, for the ear would catch the higher of the two components sooner than the lower: *ἀλλ' οὐδὲ τάχει ἂν διαφέροι ὁ ὀξύς· προκατελαμβάνετο γὰρ ἂν τὴν ἀκοὴν ὥστε μὴ γίγνεσθαι σύμφωνον.* This difficulty (see *Tim.* 80 A, B and Theophr., *De Sensibus*, § 85, *Doxogr. Gr.* 525, 17), had already occurred to Plato, who met it by supposing that one vocal sound is in accord with another when the beginning of the slower is similar to the ending of the more rapid: *συμφωνεῖν δ' ὅταν ἡ ἀρχὴ τῆς βραδείας ὁμοία ᾖ τῇ τελευτῇ τῆς ταχείας.* Cf. Simpl. 147, 9—14, whose account is most explicit. It seems quite clear from *De Sensu* 7, 448 a 19 sqq., that, like Theophr., A. believed that two notes, one high, one low, which in a chord coalesce into an unity, are heard at one and the same moment: at any rate, he rejects the hypothesis of certain musical theorists, that the two sounds which compose the chord, though not arriving simultaneously, appear to do so, their lack of simultaneity being undetected, when the time between them is so short as to be imperceptible. This is impossible, according to A., because there is no such thing as imperceptible time. The argument of Theophr. is apparently fatal to the Pythagorean theory which A. here disclaims, 420 a 31 *οὐ δὴ ταχὺ τὸ ὀξὺ κτέ.* But at the same time it is not easy to see how the whole passage is to be interpreted, if A. as well as Theophr. had really emancipated himself from the

view that a shrill or high note travels and is transmitted more rapidly than a deep or low one. The words διὰ τὸ τάχος and διὰ βραδυτῆτα seem against this. We may say with Zeller (*Aristotle* II. p. 379, n. 3, E.T.) that Theophr. is opposing both A. and Plato: but the context of *frag.* 89 does not favour this supposition. We cannot credit Theophr. with the crucial experiment of the chord, for he found it in *De Sensu.* If, however, A., by his metaphors of stab and thrust, is describing the character of the contrasted sensations as facts of experience, and not as physiological processes, a different view may be taken of διὰ τὸ τάχος, διὰ βραδυτῆτα and of ἐν ὀλίγῳ χρόνῳ ἐπὶ πολύ. The "time" would be that during which the sensation lasts, not that which has elapsed between the shock to the sonorous body and our apprehension of the sound, an interval of which we are seldom conscious; while the relative speed would be an attribute of the sensation, wholly independent of the physical conditions necessary for the production of the sound and the rate at which the shock has travelled through the air. On this view the passage would furnish no evidence of A.'s opinion on the question whether the shrill sound does or does not travel faster than the deep or grave sound. *A fortiori*, there would be no need to suppose, with Simpl. (147, 7 sqq.), that the sentence a 30 τὸ μὲν γὰρ ὀξὺ...a 31 ἐν πολλῷ ἐπ' ὀλίγον, so far from expressing A.'s own opinion, is actually the same view as the one which he emphatically condemns in the next sentence a 31 οὐ δὴ ταχὺ κτἑ.

To turn now to the ancient commentators. Philop. (373, 14 sqq.) gives the fullest explanation. He distinguishes between sound, the incorporeal ἐνέργεια, which does not move in space, and the air, which does so travel and of which sound is the energy. Thus ψόφος ὀξύς = ψόφος ταχέως παραγινόμενος ἐπὶ τὴν αἴσθησιν καὶ ἐπιμένων, while ψ. βαρύς = ψ. βραδέως παραγινόμενος ἐπὶ τὴν αἴσθησιν καὶ ταχέως ἀποπαυόμενος. He illustrates from the bow-string and the strings of the lyre. The bow-string takes a short time to discharge the arrow and for the same reason sends it a long way, the rapidity of discharge showing greater force: and so generally with strings at greater tension. The ὑπάτη of the lyre which gives the note of lowest pitch, like the G string of a violin, takes a long time to move the medium and keeps up the movement only a short time, ἐπ' ὀλίγον ἐφύλαξεν. Thin strings, like the high-pitched νήτη, having a thinner column of air to resist, move the air more quickly and each single vibration ceases sooner, but the series of vibrations lasts longer. Being tense, the string gives the air a smart blow, the air then retaliates with a sharp blow on the string and so on: the sound lasts as long as the series of vibrations. The reverse is the case with the thicker strings which sound the lower notes. They are slower to move the air and each single vibration lasts longer, but the series of vibrations ceases sooner, because they give the air a gentler blow and receive a gentler one from it. When he comes to a 32 ἀλλὰ γίνεται Philop. gives two alternative explanations: (*a*) "owing to the speed of the body which is moved and in which the sound is [the air], the stimulation of the sense by the sound becomes like it," i.e. speedy; (*b*) rapid or slow effect upon the sense happens to accompany shrillness or depth in sound exactly as in touch it accompanies rapidity or slowness of cleaving or dividing. What is sharp cleaves quickly: therefore rapidity of cleavage is a concomitant of sharpness to the touch. So in sound acuteness of pitch is one thing, rapid movement of sense is another, which attends upon the former. Philop. is evidently influenced by *De Gen. An.* V. 7, 786 b 25 sqq. and perhaps by certain of the musical Problems, e.g. *Prob.* XIX. 8, 21, 37, 49, 50. By κινεῖ, κίνησις he clearly understood spatial motion: cf. 374, 17 sq., 373, 21, 23. He took ἐπὶ πολὺ as well as ἐν ὀλίγῳ χρόνῳ of time. Simpl. (147, 3 sqq.) takes ἐπὶ πολὺ to combine distance and duration,

καὶ ἐπὶ πολὺ διάστημα καὶ ἐπὶ πολὺν ἐπιμένον χρόνον ἐξάκουστον. The low note is more slowly heard and for a less distance and lasts a shorter time. On the analogy of acute and blunt to touch, the acute of sound penetrates and strikes deep down, *διεισδύνει καὶ οἷον κατὰ βάθος πλήττει*, the deep note makes a more superficial impression *οἷον ἐπιπολαιότερον καὶ κατὰ θλῖψιν*. He understands *τοιαύτη*, not as *ταχεῖα*, *βραδεῖα*, but as *ὀξεῖα*, *βαρεῖα*. For to stimulate sense in a short time deeply implies *ταχυτής* but not *ὀξύτης*: therefore we shall be speaking of the motions, not as shrill or deep, but as quick or slow, even when we do call them shrill or deep.

a 30. κινεῖ τὴν αἴσθησιν: indirectly, for the necessity of a medium was insisted upon 419 a 27—29. The phrase recurs 426 b 31. See 417 b 2, *note* on *τὸ πάσχειν*, and 431 a 4 sq. Cf. also *De Sensu* 6, 445 b 8.

a 31. ἐπὶ πολύ. As we have seen, this has been variously interpreted of (1) distance traversed by vocal sound before it is heard or of (2) the duration, or (3) the extent, of the effect produced upon the ear when it is heard. In any case *ἐν ὀλίγῳ χρόνῳ ἐπὶ πολὺ = ταχέως*. The objection to (1) is that it seems inconsistent with the next sentence, a 31, *οὐ δὴ κτέ.* What one would expect from the passage in *De Gen. An.* v. 7, 786 b 25 sqq. is some recognition of the mass of air to be moved, so that "in a short time" should be qualified by some such words as "considering the relatively large mass to be moved." But I cannot find this in the text and it is quite inconsistent with Philop., who says expressly that the swiftness of the shrill note is partly due to the relatively small mass of air set in motion.

a 31. οὐ δή. This is not saying that what is high-pitched is (identically) quick, or what is low-pitched (identically) slow, but that when we hear a shrill or high note the movement in us or sensation is what it is (i.e. high-pitched or shrill) owing to speed, and when we hear a deep or low note the movement in us is what it is (i.e. deep or low) owing to slowness (characterising it). With this explanation, the apparently opposite statement in *De Gen. An.* (l.c. 787 a 30 sqq.) to the effect that *τὸ ταχὺ* is *ὀξὺ ἐν φωνῇ* and that *τὸ βραδέως φερόμενον* is *βαρύ*, does not conflict. Simpl. says *διὰ τὸ τάχος* means *κατὰ τὸ τάχος*, "in virtue of speed," and not *κατὰ τὴν ὀξύτητα*, "in virtue of high pitch." He thinks (147, 36—148, 1) that *οὕτω δὴ* in place of the *οὐ δὴ* of our text would better express the *reductio ad absurdum* to which the preceding sentence a 30 *τὸ μὲν γὰρ ὀξὺ κτέ.*, in his opinion the view of others and not of A. himself, would be exposed.

a 33. τοιαύτη, "such as described": in other words, *ἐν ὀλίγῳ χρόνῳ ἐπὶ πολὺ τὴν αἴσθησιν κινεῖ*, its description on the analogy of touch being that it rapidly produces a considerable impression (or with the other meaning of *ἐπὶ πολύ*, a lasting impression). I am not sure that Philop. (374, 21—23, 28 sq.) means anything different from this, though he does seem to imply that he took *τοιαύτη* for *ταχεῖα* and *βραδεῖα*.

a 33. τοῦ δὲ διὰ βραδυτῆτα. We complete this elliptical sentence *τοῦ δὲ βαρέος γίνεται ἡ κίνησις τοιαύτη*: in other words, *ἐν πολλῷ ἐπ' ὀλίγον τὴν αἴσθησιν κινεῖ*.

420 b 2 τὸ μὲν γὰρ...4 βραδὺ εἶναι. This remark concerns the illustration from touch, and not the quality of pitch.

b 3. ὥστε συμβαίνει. And so the one is *per accidens* quick, the other *per accidens* slow. We say that a clock is fast or slow when its works go too fast or too slow. Here *συμβαίνει εἶναι = κατὰ συμβεβηκός ἐστι*: cf. Simpl. 147, 34—36, 148, 6—8, Philop. 374, 29—31.

420 b 5—421 a 6. Voice, as distinct from mere sound, is peculiar to living things. Not all animals, however, have vocal sound. Bloodless

animals and fishes have none [§ 9]. For the production of voice, there must be breath, or air inhaled. To render it articulate speech (*διάλεκτος*) there is need also of the tongue (which, thus, has a second function besides its own necessary function in taste) [§ 10]. Physiologically, voice is produced in the *φάρυγξ*, now known as the larynx, by the action of the soul-moved breath against the wind-pipe or trachea. It is for lack of such a larynx that fishes are voiceless. Not every sound made by an animal is voice. Voice presupposes a mental image present to the animal, and is thus "significant" (*σημαντικός*) [§ 11]. Voice is impossible if we hold our breath [§ 12].

420 b 5. ἡ δὲ φωνή. The object of hearing is sound in general, but more particularly the species, vocal sound, or voice. See *Hist. An.* IV. 9, 535 a 27 *περὶ φωνῆς τῶν ζῴων ὧδ' ἔχει. φωνὴ καὶ ψόφος ἕτερόν ἐστι, καὶ τρίτον τούτων διάλεκτος. φωνεῖ μὲν οὖν οὐδενὶ τῶν ἄλλων μορίων οὐδὲν πλὴν τῷ φάρυγγι· διὸ ὅσα μὴ ἔχει πνεύμονα, οὐδὲ φθέγγεται· διάλεκτος δέ ἡ τῆς φωνῆς ἐστὶ τῇ γλώττῃ διάρθρωσις. τὰ μὲν οὖν φωνήεντα ἡ φωνὴ καὶ ὁ λάρυγξ ἀφίησιν, τὰ δὲ ἄφωνα ἡ γλῶττα καὶ τὰ χείλη· ἐξ ὧν ἡ διάλεκτός ἐστιν.* When attention was concentrated upon the human soul (cf. 402 b 4), it was natural that vocal sound should be regarded as the exclusive object of hearing. Cf. Plato, *Charm.* 168 D *οἷον ἡ ἀκοή, φαμέν, οὐκ ἄλλου τινὸς ἦν ἀκοὴ ἢ φωνῆς...φωνὴν ἐχούσης ἑαυτῆς ἀκούσεται· οὐ γὰρ ἂν ἄλλως ἀκούσειε.* Hence the teleological conclusion (435 b 24 sq.) that speech subserves the end of communicating, and not as in Talleyrand's improved version, of concealing, our thoughts. On the difference between "voice" and "speech" cf. *Pol.* 1253 a 9—18. According to *De Gen. An.* V. 7, 786 b 21 sq., *φωνή* is *ὕλη τοῦ λόγου*: cf. *Metaph.* 1038 a 6 *ἡ μὲν γὰρ φωνὴ γένος καὶ ὕλη, αἱ δὲ διαφοραὶ τὰ εἴδη καὶ τὰ στοιχεῖα ἐκ ταύτης ποιοῦσιν.*

b 6. τῶν...ἀψύχων. Cf. *Metaph.* 1019 b 13 *καὶ γὰρ ἐν τοῖς ἀψύχοις ἔνεστιν ἡ τοιαύτη δύναμις, οἷον ἐν τοῖς ὀργάνοις· τὴν μὲν γὰρ δύνασθαί φασι φθέγγεσθαι λύραν, τὴν δ' οὐδέν, ἐὰν ᾖ μὴ εὔφωνος.* Also St Paul, *ad Corinth.* I. 14, 7 *ὅμως τὰ ἄψυχα φωνὴν διδόντα, εἴτε αὐλὸς εἴτε κιθάρα, ἐὰν διαστολὴν τοῖς φθόγγοις μὴ δῷ, πῶς γνωσθήσεται τὸ αὐλούμενον ἢ τὸ κιθαριζόμενον;*

b 8. ἀπότασιν, the "register," i.e. range of notes of which a voice is capable, the generic term of which *ἐπίτασις* and *ἄνεσις* are the correlative species, marking the ascending and descending scales. Cf. for *ἀπότασις* *Hist. An.* V. 14, 545 a 17 [*ζῴων*], *ὅσων ἐστὶν ἀπότασις τῆς φωνῆς* and for *ἐπίτασις* Aristox., *Harm. Elem.* I. 10 (Meib.) *ἡ μὲν οὖν ἐπίτασίς ἐστι κίνησις τῆς φωνῆς συνεχὴς ἐκ βαρυτέρου τόπου εἰς ὀξύτερον.* **μέλος**, "tune," implying a succession of musical notes. This is an advance from *ἐπίτασις*, for the shriek of a railway whistle or the boom of a bittern exemplify high and low pitch, but are not properly musical sounds. As far as I am aware, Greek musical writers have left no definition of *μέλος*. It is one of those simple, unanalysable notions which, in A.'s words, *μετὰ τῆς αἰσθήσεως ἢ τῆς νοήσεως γνωρίζονται.* Cf. Bacchius, *Isagoge* (ed. Jan, p. 297, 22) *μέλος δὲ τί ἐστιν; ἄνεσις καὶ ἐπίτασις δι' ἐμμελῶν φθόγγων γινομένη.* This is a definition in a circle of tune or melody in general, since *ἐμμελῶν* implies *μέλος*. A particular tune or melody is defined *ib.* 309, 13 as *τὸ ἐκ φθόγγων καὶ διαστημάτων καὶ χρόνων συγκείμενον*, "that which is made up of notes and intervals and times," but this again is circular, for his account of *φθόγγος* (292, 15), viz. *φωνῆς ἐμμελοῦς πτῶσις ἐπὶ μίαν τάσιν· μία γὰρ τάσις ἐν φωνῇ ληφθεῖσα ἐμμελῆ φθόγγον ἀποτελεῖ*, though a very good description, does not satisfy the requirements of a logical definition. In several passages of the *Politics* A. implies that *μέλη*, melodies or tunes, and *ῥυθμοί*, rhythms, are the essential factors in music: 1340 a 13, 19, 1341 a 1, 14. The essential difference between *μέλος* and *φθόγγος*, song and speech, is well brought out *Metaph.*

1053 b 34—1054 a 2. If the universe consisted entirely of μέλη, it would be a number or assemblage of quarter tones, a quarter tone being the least musical interval, and so the unit of the scale. But if the universe consisted solely of φθόγγοι, it would be a number or assemblage of elementary sounds (στοιχεῖα, vowels and consonants: not, as Bonitz translates, Buchstaben) and a vowel sound would be the unit.

b 8. διάλεκτον, "articulate utterance," "language," "speech," ἡ τῆς φωνῆς... τῇ γλώττῃ διάρθρωσις, as in 535 a 30, cited in *note* on 420 b 5 *supra*: cf. 420 b 18. That discourse of sweet sound should be attributed to instruments may be best understood if we take the case when the instruments accompany the chorus or when without the voices they play the same melody which the voices afterwards sing unaccompanied. The first case is noticed in *Prob.* XIX. 9, 918 a 22 διὰ τί ἥδιον τῆς μονῳδίας ἀκούομεν, ἐάν τις πρὸς αὐλὸν ἢ λύραν ᾄδῃ; καίτοι πρόσχορδα [sic Jan] καὶ τὸ αὐτὸ μέλος ᾄδουσιν ἀμφοτέρω[ς]. Cf. *ib.* XIX. 27, 919 b 26 διὰ τί τὸ ἀκουστὸν μόνον ἦθος ἔχει τῶν αἰσθητῶν; καὶ γὰρ ἐὰν ᾖ ἄνευ λόγου μέλος, ὅμως ἔχει ἦθος, *ib.* XIX. 15. When an instrumental melody is said to have character, ἦθος, it may well be supposed to "speak." The same mode of thought recurs in the musical criticism of the present day, in fact, it is implied by the very common direction "cantabile" and by our expression "phrasing," as applied to a single instrument. Professor Beare, *Greek Theories*, p. 118, thinks διάλεκτος is "distinct from μέλος and used to designate the effect of a number of instruments played in harmony or in unison....Articulation and harmony are terms as suitable for the interplay of ideas in conversation as for that of tones in concert." I see no reason for assuming that several instruments are necessary to διάλεκτος: surely one can speak, as one person can carry on a monologue. As I understand it, the difference between μέλος and διάλεκτος is that in the one the instrument mimics the emotions, in the other the intellectual functions, of human speech. As with the voice words may be either said or sung, so it is claimed for the instrument without the voice that it can express or suggest ideas in songs without words. Cf. *Probl.* XIX. 15, 918 b 17 μᾶλλον γὰρ τῷ μέλει ἀνάγκη μιμεῖσθαι ἢ τοῖς ῥήμασιν: in the expression of the idea the music, as we should say, is more important than the libretto. A. is approximating the instrument to the human voice by gradual stages. The lyre has its high and low notes, it can play a melody, it can, in fact, talk. **ἔοικε γάρ.** This may be taken impersonally, = εἰκός ἐστιν. Or, if τὰ ἄψυχα be the subject, we may supply either φωνεῖν or τοῖς φωνοῦσι.

b 9. ταῦτ', i.e. pitch, melody, articulation (ἀπότασις, μέλος, διάλεκτος).

b 10. ἄναιμα, i.e. insecta, crustacea, mollusca (cephalopoda), testacea. See Ogle on *Parts of Animals*, pp. xxvii.—xxx. There follows in our text a parenthetical remark on fishes.

b 11. τοῦτ', i.e. that they are voiceless. **εὐλόγως**, int. ἔχει.

b 12. οἱ λεγόμενοι φωνεῖν. Cf. *Hist. An.* IV. 9, 535 b 14 sqq. οἱ δ' ἰχθύες ἄφωνοι μέν εἰσιν,...ψόφους δέ τινας ἀφιᾶσι καὶ τριγμοὺς οὓς λέγουσι φωνεῖν, οἷον λύρα καὶ χρομίς...καὶ ὁ κάπρος ὁ ἐν τῷ Ἀχελῴῳ, ἔτι δὲ χαλκὶς καὶ κόκκυξ...πάντα δὲ ταύτα τὴν δοκοῦσαν φωνὴν ἀφιᾶσι τὰ μὲν τῇ τρίψει τῶν βραγχίων,...τὰ δὲ τοῖς ἐντὸς τοῖς περὶ τὴν κοιλίαν· πνεῦμα γὰρ ἔχει τούτων ἕκαστον, ὃ προστρίβοντα καὶ κινοῦντα ποιεῖ τοὺς ψόφους.

b 13. ζῴου ψόφος. This does not rule out fish. Torstrik supposes οὐ πᾶς δὲ to have fallen out after ψόφος. If we are not satisfied with A.'s expression, the addition is a perfectly good correction.

b 14. οὐ τῷ τυχόντι μορίῳ, int. γινόμενος, that is, produced by a particular or appropriate, and not by any and every, organ. **πᾶν ψοφεῖ...15 ἔν τινι**

"everything [i.e. everything that is sonorous, *πᾶν τὸ ψοφητικόν*] emits sound" by reason of there being something that strikes, something that is struck, and a medium: cf. 419 b 9 *γίνεται δ' ὁ κατ' ἐνέργειαν ψόφος ἀεί τινος πρός τι καὶ ἔν τινι.*

b 15. **τοῦτο δ'**, i.e. the medium.

b 16. **ἤδη**. The word seems to emphasise *ἀναπνεομένῳ*: "uses the air which is in any case breathed." No translator whom I have consulted has succeeded in expressing its force.

b 17. **ἐπὶ δύο ἔργα.** You want breath (1) to keep life going, the necessary function, (2) for the nobler function, the luxury, of speech. To qualify the internal heat is the explanation of the use of the lungs in *De Part. An.* III. 6, 668 b 33 sqq., *De Resp.* 10, 476 a 7—15. Cf. *De Sensu* 5, 444 a 25. Respiration subserves two ends: its *ἔργον* is to reinforce the action of the chest, its *πάρεργον* is to facilitate smell. Arteries were taken for air vessels because they were without blood after death. Therefore their use was supposed to be to cool the blood.

b 18. **τῇ γλώττῃ.** Cf. *De Resp.* 11, 476 a 18 *καθάπερ ἐνίοις τῇ γλώττῃ πρός τε τοὺς χυμοὺς καὶ πρὸς τὴν ἑρμηνείαν.*

b 19 **ἀναγκαῖον...20 ἕνεκα τοῦ εὖ.** This contrast of what is "necessary" to existence and what is conducive to its perfection or full development, i.e. the distinction between necessary and nobler functions, is characteristic of Aristotle. Cf. 434 b 21 sqq., 435 b 20 sq., *Pol.* 1252 b 28 *κοινωνία...γινομένη μὲν οὖν τοῦ ζῆν ἕνεκεν, οὖσα δὲ τοῦ εὖ ζῆν*, 1280 a 31 *εἰ δὲ μήτε τοῦ ζῆν μόνον ἕνεκεν* [int. *ἐκοινώνησαν καὶ συνῆλθον*] *ἀλλὰ μᾶλλον τοῦ εὖ ζῆν*, 1280 b 29—35, *ib.* 1338 a 13 sqq., *De Part. An.* III. 7, 670 b 23 *οἱ δὲ νεφροὶ τοῖς ἔχουσιν οὐκ ἐξ ἀνάγκης, ἀλλὰ τοῦ εὖ καὶ καλῶς ἕνεκεν ὑπάρχουσιν*, *ib.* III. 10, 672 b 23.

b 19. **ἡ δ' ἑρμηνεία.** To express and interpret thought is the special function of language (*διάλεκτος*). Cf. *Pol.* 1253 a 14 *ὁ δὲ λόγος* [rational speech, as distinguished from *φωνή*, which irrational animals share] *ἐπὶ τῷ δηλοῦν ἐστὶ τὸ συμφέρον καὶ τὸ βλαβερὸν κτέ.* Cf. again 435 b 24 sq. *γλῶτταν δὲ ὅπως σημαίνῃ τι ἑτέρῳ.* Cf. also *De Resp.* 11, 476 a 18 sq. as cited in *note* on 420 b 18.

b 20. **ἕνεκα τοῦ εὖ.** *Ind. Ar.* 291 b 25 frequentissime legitur *τὸ εὖ*, vel ita, ut e contextu orationis infinitivus verbi alicuius cogitatione addatur, veluti *κιθαριστοῦ τὸ κιθαρίζειν, σπουδαίου δὲ τὸ εὖ* [sc. *κιθαρίζειν*], *Eth. Nic.* 1098 a 12, ...vel ita, ut *τὸ εὖ* in substantivi naturam abire videatur, syn *τὸ ἀγαθόν, τὸ καλόν* (neque utriusque usus fines ubique accurate circumscribi possint). Here, as in 420 b 22 *infra* and probably 435 b 21, *τὸ εὖ* is a substantive.

b 21. **ἐν ἑτέροις**, i.e. in *De Resp.*, c. 8, especially 474 b 10 sqq.

b 23. **ὁ φάρυγξ.** The cavity at the back of the mouth opens both into the oesophagus or gullet and into the windpipe. A. uses the term *φάρυγξ* (= throat) chiefly for the upper part of the windpipe itself, what we call the "larynx": cf. *Hist. An.* IV. 9, 535 a 28 sq. In *ib.* X. 5, 637 a 29 he mentions a passage from the nostrils to the *φάρυγξ*. In *De Part. An.* III. 3, 664 a 16, the *φάρυγξ* is distinguished from the *οἰσοφάγος*. See also III. 3, 665 a 10: but in *Eth. Nic.* 1118 a 32 sq. they are confused, *φάρυγξ* there being clearly the oesophagus. A. also occasionally uses the word *λάρυγξ*. By Galen's time the terms *φάρυγξ* and *λάρυγξ* had come to be discriminated (cf. *Ind. Ar.* s.v. *φάρυγξ*, where Galen's definitions, XIX. 359, XVIII. B 264, 961, XIV. 715, are quoted). On the supposed difference between *ἡ φάρυγξ* and *ὁ φάρυγξ* see Lobeck, *Phrynichus*, p. 65.

b 25. **δεῖται...26 πρῶτος**, "is the first to need." Simplicius paraphrases by *πρώτως*, "primarily needs breath to cool it." Them. 66, 36 sqq. H., 122, 17 sqq. Sp., Simpl. 149, 17—20 and Philop. 382, 24—28 say more precisely that

it is the heart which most needs to be cooled, and the lung because it is near the heart and shares in its warmth.

b 26. ἀναπνεομένου, int. τοῦ ἀέρος, although τὸν ἀέρα is the subject of εἰσιέναι. This use of the genitive absolute, found in other writers, is more frequent in Aristotle (cf. *Ind. Ar.* 149 b 26 sqq., also Waitz, *Organon* ad 57 a 33, Bonitz, *Metaph.* 990 b 14).

b 28. τῆς ἐν τούτοις τοῖς μορίοις ψυχῆς. We require breath where the vital force is greatest, and the heart is the seat of life. But economical nature makes a further use of the breath. It is thrown by the ψυχή in the organs of respiration (τὰ ἀναπνευστικὰ ὄργανα, Them. 67, 4 sq. H., 122, 25 sqq. Sp.) against the windpipe, or, strictly, against the air in the windpipe. These "organs of respiration," according to Them., are the tongue, the palate and the windpipe or φάρυγξ. This ψυχή strikes the air in the windpipe against the windpipe. A. thus gets a parallel to his account of hearing: air in the windpipe answers to air in the internal ear. Cf. Philop. 384, 4 sqq., who carefully points out the distinction: πλὴν ὅτι τὸ μὲν ἐν τοῖς ὠσὶν ἀκίνητόν ἐστιν καὶ ἀεὶ τὸ αὐτό, τὸ δὲ ἐν τῇ ἀρτηρίᾳ ἄλλοτε ἄλλο. Cf. Them. 67, 16 sq. H., 123, 13 sqq. Sp. Cf. the account of echo 419 a 25—27 *supra*.

b 29. ἀρτηρίαν. Here ἡ ἀρτηρία = ἡ τραχεῖα ἀρτηρία (not, as L. and S. say, ἡ ἀρτηρία τραχεῖα), i.e. ἡ τραχεῖα, the trachea or windpipe. Τὴν **καλουμένην** ἀρτηρίαν, "the windpipe, as it is called," because ἀρτηρία in general denotes any tube in the body, especially the arteries.

b 30. καθάπερ εἴπομεν. In 420 b 14 οὐ τῷ τυχόντι μορίῳ (cf. 420 b 12 τοῖς βραγχίοις): but the condition there stated, viz. the appropriate organ for the production of voice, is not enough.

b 31. τὸ τύπτον. That which strikes, as distinct from that upon which it strikes (τι) and the air which serves as medium (ἔν τινι), 420 b 14—16.

b 32. μετὰ φαντασίας τινός, int. δεῖ εἶναι. There must be simultaneously a mental picture, φάντασμα: Them. 67, 25 H., 123, 26 Sp. μετὰ φαντασίας σημαντικῆς. In the singular, as more often in the plural (425 b 25), φαντασία can mean the mental picture and not the faculty or operation of imagining. *Ind. Ar.* 812 a 19 etiam numerus singularis interdum ita est accipiendus [i.e. non facultatem vel actionem imaginandi significat, sed imaginem animo obversantem]. Cf. *Phys.* IV. 4, 211 b 34 ὁ τόπος διὰ τοιαύτης τινὸς εἶναι δοκεῖ φαντασίας, *Magna Mor.* II. 6, 1203 b 4 ὁ ἐκ τῆς προσφάτου φαντασίας ἀκρατής. **σημαντικός.** All voice, according to A., is indicative of something, whether feeling, desire or (in the case of men) thought. Thus it is by the presence of the image that vocal sound is mainly differentiated from mere noise.

421 a 1. ἀλλὰ τούτῳ, int. τῷ ἀναπνεομένῳ πνεύματι. The subject to τύπτει must be τὸ ἔμψυχον, the animate being, τὸ τύπτον of 420 b 31. By means of the air breathed the animal causes the impact of the air in the windpipe (τὸν ἐν τῇ ἀρτηρίᾳ, int. ἀέρα) against the windpipe.

a 2. ἀναπνέοντα: cf. *Probl.* XI. 14, 900 a 39 ἐκπνέοντες, οὐκ εἰσπνέοντες φωνοῦμεν. The generic term here, as frequently, is used for the specific εἰσπνέοντα or inhaling. Cf. *infra* 421 b 14 μὴ ἀναπνέων δὲ ἀλλ' ἐκπνέων ἢ κατέχων τὸ πνεῦμα οὐκ ὀσμᾶται. In both passages ἀνα-πνεῖν = in-spire, ἐκ-πνεῖν = re-spire, κατέχειν [int. τὸ πνεῦμα] = hold the breath.

a 3. τούτῳ. By a 1, 2 *supra* this should mean the air that is breathed, with which the air in the windpipe about to be exhaled is struck. In fact, the windpipe is the meeting place of two currents (1) the air which is being inhaled and (2) the breath from the chest, the passage of which outward is checked by ὁ κατέχων. The collision between these two currents of air sends one of

them against the edges of the windpipe and, according to 420 b 27 and 421 a 1, what is so sent is not the air in process of inhalation, as this is the instrument. So Simpl. *κινεῖ μὲν ὁ ἀναπνέων, ἔμψυχος δηλαδὴ ὢν καὶ κινούμενος ὑπὸ τῆς ψυχῆς, χρώμενος δὲ τῷ ἀναπνεομένῳ οὐ πρὸς τὸ εἰσπνεῖν ἢ ἐκπνεῖν, ἀλλὰ κατέχων, ἵνα τούτῳ ἀθρόως τύψῃ τὸν ἐν τῇ ἀρτηρίᾳ καὶ προσκρούσῃ αὐτὸν τῇ ἀρτηρίᾳ.* This interpretation is fully borne out by Them. 67, 12 H., 123, 8 Sp. *τοῦ γὰρ ἀναπνεομένου ἀέρος ἐστὶ πληγή* [int. *ἡ βῆξις*, sic Them.], *ἡ φωνὴ δὲ οὐχὶ τούτου πληγή, ἀλλὰ τούτῳ· τούτῳ γὰρ τύπτει τὸν ἀπειλημμένον τῇ ἀρτηρίᾳ...ὁ μὲν ἀναπνεόμενος ἀὴρ τὸν ἐν τῇ ἀρτηρίᾳ πλήττει, οὗτος δὲ αὐτὴν τὴν ἀρτηρίαν...δεῖ γὰρ κατασχεῖν τὸν εἰσπνεύσαντα ἀέρα καὶ οὕτω πλῆξαι τὸν εἴσω.* Philop. 384, 2 sqq. also supports *τούτῳ*, though, according to him, it is with the air which he is restraining from exit that *ὁ κατέχων* sets in motion the air which is being inhaled.

a 6. ἕτερός ἐστι λόγος. See *De Part. An.* III. 6, 669 a 2 *ἀνάγκη δὲ καταψύχειν ἔξωθεν* [int. *τὸ θερμόν*] *ἢ ὕδατι ἢ ἀέρι. διόπερ τῶν μὲν ἰχθύων οὐδεὶς ἔχει πλεύμονα, ἀλλ' ἀντὶ τούτου βράγχια, καθάπερ εἴρηται ἐν τοῖς περὶ ἀναπνοῆς· ὕδατι γὰρ ποιεῖται τὴν κατάψυξιν*, *De Resp.* 9, 474 b 25 *ἐπεὶ δὲ τῶν ζῴων τὰ μὲν ἔνυδρα, τὰ δ' ἐν τῇ γῇ ποιεῖται τὴν διατριβήν, τούτων τοῖς μὲν μικροῖς πάμπαν καὶ τοῖς ἀναίμοις ἡ γινομένη ἐκ τοῦ περιέχοντος ἢ ὕδατος ἢ ἀέρος ψύξις ἱκανὴ πρὸς τὴν βοήθειαν τῆς φθορᾶς ταύτης· μικρὸν γὰρ ἔχοντα τὸ θερμὸν μικρᾶς δέονται τῆς βοηθείας*...(475 a 9) *κινοῦσι γὰρ* [int. *τὰ ἔντομα*, e.g. bees, wasps, cockchafers and other insects which hum] *τὸν τόπον τοῦτον, ὥσπερ τὰ ἀναπνέοντα ἔξωθεν τῷ πλεύμονι καὶ οἱ ἰχθύες τοῖς βραγχίοις.* See also *De Resp.* 10, 476 a 1 *ὅσα δὲ βράγχια κτέ.*

CHAPTER IX.

421 a 7—422 a 7. The nature of smell and its object are less easy to determine than that of sight or hearing, this sense not being developed in us to the same degree of delicacy as in the other animals [§ 1]. Our position in regard to smell is comparable to that of the hard-eyed animals in respect of sight. The superiority of man on the other hand is shown especially in touch [§ 2]. Varieties of odour correspond to and are named from varieties of flavour, the latter being the more clearly distinguishable [§ 3]. Smell conforms to the analogy of the other senses and has as its object the inodorous (i.e. that which has a faint smell or none at all) as well as the odorous [§ 4]. The medium of smell is air or water, as is clear from the fact that animals, whether living in the water, in the air, or on land, all scent their food [§ 5]. It is only while inhaling breath that man can smell: a trait peculiar to man [§ 6]. The organ of smell, in man and other animals that inhale breath, has a protection, not possessed by other species, namely the nostril, just as the eyes of all but hard-eyed animals have lids [§ 7]. The object of smell is dry, while the object of taste is moist [§ 8].

With this chapter should be compared *De Sensu* c. 5, 442 b 27—445 b 1 which serves partly to illustrate, partly to supplement the present discussion, the most important addition there made being the distinction between two kinds of *ὀσφραντόν*. The first is that discussed in this chapter, the second causes a purely aesthetic pleasure, which only man feels; the scent of flowers is the best example of this second kind (443 b 17 sqq.). The *ὀσφραντὸν* treated in our present chapter is classified by A. on the analogy of flavours, 421 a 26 sqq.

421 a 7. τῶν εἰρημένων, int. *αἰσθήσεών τε καὶ αἰσθητῶν*, viz. sight and hearing and their respective objects.

a 8. ἡ ὀσμή here means "odour," i.e. *τὸ αἰσθητόν*, as is shown by its co-ordination with sound and colour. The word is in itself ambiguous (like *ὄψις, ἀκοή, αἴσθησις*) and is used sometimes (subjectively) like *ὄσφρησις* of the faculty or act of perception, sometimes of the object perceived, odour, *ὀσφραντόν*, and sometimes to cover both (like our words "smell" and "scent").

a 9 οὐκ ἔχομεν ἀκριβῆ...10 ζῴων. The remark is repeated in *De Sensu* 4, 440 b 31—441 a 3 as follows: "of all animals we have the poorest sense of smell; it is the poorest, too, of all our own senses, whereas of all animals we have the most delicate sense of touch, and taste is a sort of touch." Accordingly in *De Sensu* A. first discusses flavours and uses the results thus obtained for the explanation of odours. **ἀκριβῆ**, "precise" and so "delicately discriminating," like the Latin *subtilis*.

a 12. ἄνευ τοῦ λυπηροῦ ἢ τοῦ ἡδέος. That is, unless the odour is sufficiently marked or powerful to produce positive pain or pleasure. We are conscious only of the intense forms. In other senses (e.g. taste) you can have intellectual discrimination of flavour etc. apart from the gratification of appetite.

a 13. οὕτω, *φαύλως, μὴ ἀκριβῶς*, i.e. *ἀμβλύτερον*; see next *note*. **τὰ σκληρόφθαλμα.** Cf. *De Sensu* 5, 444 b 25, "some animals have eye-lids which they must open in order to see, while hard-eyed creatures have none, and so have no need of anything with which to uncover them, but see directly." Cf. also *De Part. An.* II. 13, 657 b 29 sqq.: "fishes, insecta and hard-skinned animals [e.g. beetles] have eyes of various types, but are all without eyelids. The hard-skinned animals are absolutely devoid of such protection for their eyes, and instead have hard eyes; the eyelid, so to speak, has adhered to the eye and they see through it (*οἷον βλέποντα διὰ τοῦ βλεφάρου προσπεφυκότος*): hence their sight is comparatively dim (*ἀμβλύτερον βλέπειν*). Fishes are not hard-eyed, but have soft or watery eyes (*ὑγρόφθαλμοι, De Part. An.* 658 a 3, 9)." It would seem that insects and beetles are the chief instances of hard-eyed animals.

a 15. πλὴν τῷ φοβερῷ καὶ ἀφόβῳ. So long as a telepathic sense like sight gives its possessor a danger-signal and warns him of the approach of something pernicious or destructive, it fulfils one of its main ends: 434 b 24 sqq., *De Sensu* 1, 436 b 20 *σωτηρίας ἕνεκεν ὑπάρχουσιν, ὅπως...τὰ φαῦλα καὶ τὰ φθαρτικὰ φεύγωσι.* **οὕτω δὲ καὶ τὰς ὀσμάς**, int. *μὴ διαδήλους ἔχειν* or the like. As the verb (*αἰσθάνεσθαι*) in the positive half of the preceding sentence takes a genitive, we have to think of some transitive equivalent, such as *ἔχειν* or *κρίνειν*, to govern *τὰς ὀσμάς*.

a 17. ἀνάλογον ἔχειν, int. *τὴν ὄσφρησιν*, which is the subject of *ἔχειν*: with *ἀνάλογον* we find *πρὸς* c. acc., as here and *Pol.* 1271 b 40, or the dative as in the next line 421 a 18, and 1272 b 37 sq. **ὁμοίως**, int. *ἀνάλογον ἔχειν*, the subject being *τὰ εἴδη τῶν χυμῶν*. Previously we have had *διαφοραὶ* for the distinctive species of the sensible object (e.g. 420 a 26): cf. 423 b 27. This analogy between flavours and smells is further developed *infra* a 26 sqq. and is repeated in *De Sensu* 5, 442 b 27, 443 b 12—15, 443 b 19, 445 a 29—b 1, and it is upon this analogy that A.'s explanation of the process of smell is based.

a 18. τοῖς τῆς ὀσμῆς, int. *εἴδεσιν*. **ἀκριβεστέραν**, i.e. as compared with smelling. See again *De Sensu* 4, 440 b 30 *ἐναργέστερον δ' ἐστὶν ἡμῖν τὸ τῶν χυμῶν γένος ἢ τὸ τῆς ὀσμῆς*. Thus smell is inferior not only to sight and hearing (421 a 7 sq.), but also to taste.

a 19. ταύτην δ' ἔχειν τὴν αἴσθησιν, i.e. touch.

a 20. ἀκριβεστάτην, i.e. "because touch is the most exact of man's senses," *not* "is more exact in man than in any other animal." The latter fact is

adduced in the next clause to prove the former. If man falls short of the brutes in the other senses and rises above them in touch, touch must be his most exact sense. Cf. *De Part. An.* II. 16, 660 a 12 sq.

a 21. **πολλῶν τῶν ζῴων...πολλῷ τῶν ἄλλων.** The critical *notes* amply justify this reading. Bekker made an unlucky choice when, finding πολλῶ...πολλῶ in E and other MSS., he changed the second πολλῶ instead of the first into πολλῶν.

a 22. **ἀκριβοῖ.** For this intransitive use of ἀκριβοῦν cf. *Poet.* 1450 a 36 *πρότερον δύνανται τῇ λέξει...ἀκριβοῦν ἢ τὰ πράγματα συνίστασθαι* [*συνιστάναι*, Thurot], *De Gen. An.* IV. 7, 778 a 4 *βούλεται μὲν οὖν ἡ φύσις τοῖς τούτων ἀριθμοῖς ἀριθμεῖν τὰς γενέσεις καὶ τὰς τελευτάς, οὐκ ἀκριβοῖ δὲ* and V. 1, 780 b 25 *τοῦτο* (int. *τὸ ζῷον*) *περὶ μὲν τὰς διαφορὰς οὐκ ἀκριβώσει τῶν χρωμάτων*.

a 23. **παρὰ τὸ αἰσθητήριον τοῦτο,** i.e. owing to the tactile organ, which A. identifies with σάρξ in the next sentence, though in c. 11 we learn that the true organ of touch is internal, flesh and skin being merely a medium.

a 25. **τὴν διάνοιαν,** to be taken closely with ἀφυεῖς, "poorly endowed in intellect": κατὰ might have been used to define this accusative, as we see from *Pol.* 1283 a 26 *ἐπεὶ δ' οὔτε πάντων ἴσον ἔχειν δεῖ τοὺς ἴσους ἕν τι μόνον ὄντας οὔτε ἄνισον τοὺς ἀνίσους* **καθ'** *ἕν*, Plato *Rep.* 409 E *αἱ τῶν πολιτῶν σοι τοὺς μὲν εὐφυεῖς τὰ σώματα καὶ τὰς ψυχὰς θεραπεύσουσι, τοὺς δὲ μή, ὅσοι μὲν* **κατὰ** *σῶμα τοιοῦτοι, ἀποθνήσκειν ἐάσουσι, τοὺς δὲ* **κατὰ** *τὴν ψυχὴν κακοφυεῖς καὶ ἀνιάτους αὐτοὶ ἀποκτενοῦσιν*.

a 26 **ἔστι δ', ὥσπερ χυμὸς...27 καὶ ὀσμαί,** "just as flavour is sometimes bitter, sometimes sweet, so with odours." Plato had denied (*Tim.* 66 D) that odours could be classified: *περὶ δὲ δὴ τὴν τῶν μυκτήρων δύναμιν, εἴδη μὲν οὐκ ἔνι*, his reason being that all odours are subtler than water and coarser than air, while our veins in the nostrils are formed too narrow for earth and water and too wide for fire and air. A. must be controverting this statement in *De Sensu* 5, 443 b 17 sq. As Professor Beare points out (p. 143), modern psychologists incline to Plato's view, though not of course on the same grounds. Having begun the sentence with ἔστι δέ, A. might have been expected to end it with *οὕτω καὶ ἡ ὀσμή*. But the distribution of χυμὸς into ὁ μὲν and ὁ δὲ so forcibly suggests plurality that, in spite of the initial singular, we have ὀσμαί, int. εἰσίν.

a 27. **ἀλλὰ τὰ μέν,** int. *τῶν ὀσφραντῶν* or *τῶν σωμάτων*. The plural verb ἔχουσι *more Aristoteleo* after τὰ μέν. This sentence ἀλλὰ...29 τοὐναντίον is virtually a parenthesis, as Miss Alford suggests.

a 31 **μὴ σφόδρα...32 χυμούς,** "because odours are not, like flavours, very clearly distinguished." The accusative by assimilation, τοὺς χυμούς, is perfectly regular. Cf. Thuc. VI. 68, 2 *ἄλλως τε καὶ πρὸς ἄνδρας...οὐκ ἀπολέκτους ὥσπερ καὶ ἡμᾶς*.

a 32. **ἀπὸ τούτων,** int. *τῶν χυμῶν*. The singular εἴληφε shows that the subject is ἡ ὀσμή, collective.

421 b 1. **καθ' ὁμοιότητα τῶν πραγμάτων.** "The things" which are "similar" are odours and flavours, e.g. the sweet flavour and sweet odour of honey or the bitter flavour and bitter odour of thyme. We recognise the resemblance in the act of perceiving them. Such sensible qualities are πράγματα in contradistinction to the terms used to describe them. The degree of community indicated by a common name may be relatively slight, as A. often reminds us: see the cautious remarks 414 b 20—33, *Pol.* 1275 a 33—b 5 in reference to such terms as "soul" and "citizen." Simpl. 153, 27—154, 1 goes too far afield when he enquires into the physical grounds of the relation between flavour and odour, with which we are not here concerned. What he says, *κατὰ τὰ πράγματά ἐστι συγγένεια τοῖς ὀσφραντοῖς πρὸς τὰ γευστὰ διὰ τὴν τοῦ ἐγχύμου ἀπόπλυσιν ἐν τῷ*

κοινῷ ἀέρος τε καὶ ὕδατος ὑγρῷ, is taken from *De Sensu* 5, 443 b 3—16: cf. 445 a 13 sq. We have *καθ' ὁμοιότητα λέγεται φωνεῖν* 420 b 6 sq.

b 1 ἡ μὲν γὰρ γλυκεῖα...2 τοιούτων. It is conceivable that "the sweet odour," *ἡ γλυκεῖα* (int. *ὀσμή*), is the subject, the predicate being "comes from saffron and honey." But it is more probable that A. is here only adducing examples. In that case *ἡ μὲν* is the subject, "the one odour," and *γλυκεῖα* the predicate, "is sweet," saffron and honey being adduced without any comparative *οἷον* and without the article, so that *οἷον ἡ [ἀπὸ τοῦ] κρόκου καὶ μ.* would have been the fuller version. This is the way in which Argyropylus appears to have interpreted the words: "alius enim est dulcis, ut croci mellisque, alius acer, ut thymi ac huiusmodi rerum." Or we might say that *οὖσα* must be understood with the words in apposition, *κρόκου καὶ μέλιτος*. But why, we ask, *ἀπὸ τοῦ κρόκου* parallel to the simple genitive *θύμου*? Such deliberate variation is more in the manner of Tacitus than of A., and accordingly I follow Torstrik in bracketing *ἀπὸ τοῦ*. Torstrik's note is as follows: Legebatur *ἡ μὲν γὰρ γλυκεῖα ἀπὸ τοῦ κρόκου καὶ τοῦ μέλιτος*, intell. *εἴληφε τὸ ὄνομα*. Sed verum non est odorem dulcem a croco esse appellatum: nam dulcem dicimus, non croceum odorem. Qui *ἀπὸ τοῦ* addidit, debebat certe eadem addere ante *θύμου*, b 2: id quod in iis libris factum videmus e quibus Basileensis et Aldina derivatae sunt editiones. Verba quae huic interpolationi ansam dederunt, leguntur b 1 *καθ' ὁμοιότητα τῶν πραγμάτων*, quae *πράγματα* bonus vir putavit esse *τὸν κρόκον* et *τὸ μέλι* et *τὸν θύμον*. Imo quas res A. dicit esse similes, sunt *ἡ ὀσμὴ ἡ γλυκεῖα* et *ὁ χυμὸς ὁ γλυκύς*, item *ἡ ὀσμὴ ἡ δριμεῖα* et *ὁ χυμὸς ὁ δριμύς*. Inter haec sapores praediti sunt nominibus, odores per se carent: sed quum odor quisque saporis cuiusque similis sit, etiam nomen traxit ab eo. Cf. *De Sensu et Sens.* 4, 440 b 30 (p. 157).

b 3. τὸν αὐτὸν δὲ τρόπον, int. *ἔχει*.

b 5. ἡ δέ, i.e. *ὄψις*. **καὶ ἡ ὄσφρησις**, "so smell," *τοῦ ὀσφαντοῦ καὶ ἀνοσφράντου*, int. *ἐστι*. Here *καί*, "so," answers to *ὥσπερ* 421 b 4. See 417 b 18, *note*.

b 6. ἀνόσφραντον δέ, int. *ἐστί*: cf. 418 b 28 *ἄχρουν δ' ἐστὶ τὸ διαφανὲς καὶ τὸ ἀόρατον ἢ τὸ μόλις ὁρώμενον, οἷον δοκεῖ τὸ σκοτεινόν*.

b 7. παρά, "on account of," *propter*; cf. 421 a 23.

b 8. καὶ τὸ φαύλην, int. *ἔχον*. Cf. 421 a 10 *φαύλως ὀσμᾶται*, 422 a 28 *ἐὰν μὴ ἔχῃ ἢ φαύλως*, which point to the meaning "defective," "inadequate," both here of feeble scent and 422 a 30 of insipid flavour, and therefore almost certainly also 422 a 32 *γεῦσις...φαύλη καὶ φθαρτικὴ τῆς γεύσεως*. If so, there can be little difference here between *μικρὰν* and *φαύλην*.

b 9. διὰ τοῦ μεταξύ, οἷον ἀέρος. Cf. 419 a 25—b 3, especially the words (a 32) *κοινὸν γὰρ δή τι πάθος ἐπ' ἀέρος καὶ ὕδατός ἐστιν*. In the case of smell this medium is termed *δίοσμον*; see *note* on 419 a 32. *οἷον* here means "namely," or "that is," as in 415 a 22 (see *note*). A good instance of this meaning is *De Sensu* 5, 445 a 7, 8: cf. *Eth. Nic.* 1102 a 27, 1144 a 19, 1154 a 9.

b 10. καὶ γὰρ τὰ ἔνυδρα. The mention of water as the medium leads up to the enquiry: how can aquatic and bloodless animals smell, if they do not breathe the air? **τὰ ἔνυδρα...καὶ ἔναιμα καὶ ἄναιμα.** Exactly parallel to 421 b 22 *τοῦ ὀσφραντοῦ καὶ δυσώδους καὶ εὐώδους* and 426 b 2 *ἡ ἰσχυρὰ ὀσμὴ καὶ γλυκεῖα καὶ πικρά*, which Torstrik cites. The superiority of cod. E here is evident. In the absence of punctuation a pause after *αἰσθάνεσθαι* would be likely to introduce *δὲ* after *ὁμοίως*, and this had been done by the time of Philop., who comments quite in the style of a modern editor: "*ὁμοίως δὲ...ἄναιμα* is parenthetical; if *δὲ* be omitted the syntax becomes clear": (392, 35) *τοῦτο μεταξυλογία ἐστίν. ἔστι δὲ τὸ ἀκόλουθον τῆς συντάξεως τοῦ ῥητοῦ οὕτως. καὶ γὰρ*

τὰ ἔνυδρα δοκοῦσιν ὀσμῆς αἰσθάνεσθαι, ὥσπερ καὶ τὰ ἐν τῷ ἀέρι. εἶτα τὸ ἑξῆς κατασκευαστικὸν τοῦ ὀσφραίνεσθαι τὰ ἔνυδρα, <**καὶ**> **γὰρ τούτων ἔνια πόρρωθεν ἀπαντᾷ πρὸς τὴν τροφήν·** *τούτων δηλονότι τῶν ἐνύδρων. τὸ δὲ* **ὁμοίως δὲ καὶ τὰ ἔναιμα καὶ τὰ ἄναιμα** *ἐπί τε τῶν ἐνύδρων καὶ τῶν ἐν τῷ ἀέρι· ἐν ἀμφοτέροις γάρ ἐστιν αὕτη ἡ διαφορά· ὀσφραίνονται δὲ καὶ τὰ ἄναιμα, οἷον τὰ ἔντομα. ἐὰν δὲ περιττεύῃ ὁ* **δὲ** *τοῦ* **ὁμοίως δέ,** *καθαρὰ γίνεται ἡ σύνταξις.* On the sense of smell in non-breathing animals, cf. *De Sensu* 5, 443 a 2 sqq., 444 b 7 sqq. Indeed, the sequence of topics in the latter passage as far as 445 a 1 very closely resembles that in the present chapter 421 b 9—422 a 3. See *note* on 421 b 13 *infra.*

b 12. τούτων. Doubtless water-animals, as understood by Philop. (see last *note*) and Simpl. 154, 9 *πρὸς τὸ δέλεαρ σπεύδοντες.* There is no point in saying here that animals which live in the air follow their prey by scent: the new idea is that this is done by aquatic, i.e. non-breathing animals. Cf. *De Sensu* 5, 444 b 8 *καὶ γὰρ ἰχθύες καὶ τὸ τῶν ἐντόμων γένος πᾶν ἀκριβῶς καὶ πόρρωθεν αἰσθάνεται, διὰ τὸ θρεπτικὸν εἶδος τῆς ὀσμῆς, ἀπέχοντα πολὺ τῆς οἰκείας τροφῆς...* (b 13) *καὶ τῶν θαλαττίων αἱ πορφύραι.* **ἀπαντᾷ πρὸς.** Cf. *Pol.* 1258 a 13 *πρὸς τὸ τέλος ἅπαντα δέον ἀπαντᾶν.* **ὕποσμα.** This word, used here only, is framed on the analogy of *ὑπήκοος* (cf. also *ὑπαίθριος, ὕπομβρος, ὑπόσκιος*) and means "guided by scent," "odori quasi obnoxia," as Trendelenburg has it.

b 13. ἄπορον φαίνεται, εἰ. The *εἰ* clause is used as after *θαυμαστόν*: and the *ὥστε* clause (b 19 sqq.) gives the inference suggested as following from the discrepancy, *καὶ τὸ μὲν...πειρωμένοις* (b 17—19) being a parenthesis. "It is felt as inexplicable (or 'puzzling') that while all animals alike have perception by smell, man perceives smell (only) when inhaling breath, and when not inhaling but breathing out or holding the breath has no perception of a smell either far or near, not even if the thing with odour is placed at the nostril or within it,...so that bloodless animals, since they do not inhale breath, would seem to have some different sense not included in the regular list of five." We shall be driven to assume that they have a sixth sense.

If this is right, the force of **ὁμοίως** may be no stronger than in b 10, emphasising rather the fact that all have smell, than that all smell in the same manner. The true solution, according to A., is that, though all alike smell, all do not smell in the same way (b 25 sqq.), but the possibility of different processes is here for the moment ignored, the inference being suggested (in order to be rejected) that the *ἄναιμα* do not smell at all.

The same point is raised in *De Sensu* 5, 444 b 15 *ὅτῳ δὲ αἰσθάνεται* (int. *τὰ μὴ ἀναπνέοντα τῶν ζῴων*) *οὐχ ὁμοίως φανερόν*...445 a 4. This passage is almost a duplicate of 421 b 13—422 a 3 of this chapter and forms such an excellent commentary that I append a translation of part of it. It will be noticed that, as to the precise process by which non-breathing animals smell, A. is not more explicit in the one passage than in the other. "By what means they thus perceive is not so clear. The point therefore might here be raised, with what organ they perceive odour, if we assume that smelling takes place in the act of inhaling breath, and in this way only (*μοναχῶς*); for it is a fact that all breathing animals do thus smell, whereas no one of the animals we are now considering breathes, and nevertheless they perceive odours. With what organ, then, can they perceive, if there is not some other sixth sense? But this is impossible, for smell is the sense for odours, and these they perceive, but not perhaps in the same way as breathing animals. The explanation is rather this, that in breathing animals the breath lifts up what covers over the sense-organ, as a sort of lid (and hence if they do not breathe, they do not smell), whereas in non-breathing animals there is no such lid to be lifted. It is the same here as

with the eyes; some animals have lids which they must open in order to see, while hard-eyed creatures have none, and so have no need to open them, but see, with what ability they have of seeing, directly. Likewise also none of the other animals is in the least disturbed by the smell of things essentially bad-smelling unless it happens to be something noxious. But they are killed by the odours which are noxious, just as men are stupefied and often killed by the fumes of charcoal."

b 14. **ὁ δ' ἄνθρωπος ἀναπνέων**, int. *ὀσμᾶται.*

b 16. **οὐδ' ἂν...τεθῇ**, int. *τὸ ὀσφραντόν.* The parallel experiment establishing the existence of a medium for sight is mentioned 419 a 12: cf. for hearing and smell 419 a 28 sq. and for the contrast presented by touch and taste 423 b 17—26.

b 18. **κοινὸν πάντων.** Whether we understand by *πάντων* all animals or all sensible objects depends upon whether we adhere to *ἐπὶ τῶν ἀνθρώπων* in a 19 or change to *ἐπὶ τῶν ὀσφραντῶν.* I think the alteration, though plausible, unnecessary and am content to understand here *κοινὸν πάντων τῶν ζῴων.* **ἀλλὰ τὸ ἄνευ τοῦ ἀναπνεῖν.** On this question, in what sense animals can be understood to smell without inhaling, we have, as mentioned above, a parallel and fuller disquisition in *De Sensu* 5, 444 b 15 sqq.

b 19. **ἴδιον ἐπὶ τῶν ἀνθρώπων.** Taken literally, this is not true. Other air-breathing animals also smell while inhaling breath. To meet this difficulty Hayduck proposes to substitute *ἐπὶ τῶν ὀσφραντῶν* for *ἐπὶ τῶν ἀνθρώπων.* The meaning would then be: "It is indeed universally true of all objects of sense that the object is not perceived when it is put directly on the organ, but the fact that we do not perceive without inhaling breath is a peculiarity of objects of smell." Another way is to water *ἴδιον* down to *μάλιστα ἴδιον.* Philop. (393, 9), always honest, says "man is adduced as a specimen of air-breathing animals," *οἷον ἄνθρωπος καὶ πάντα τὰ ἔχοντα πνεύμονα (τὸν γὰρ ἄνθρωπον ἔλαβε παράδειγμα ἀντὶ πάντων τῶν ἀναπνεόντων).* If this were the only place in the chapter where A., meaning "animals which breathe the air," says "men," it would be worth while to emend. But we have already had such a case, b 14, and we have only to read as far as b 24 *ὑφ' ὧνπερ ἄνθρωπος* and b 26 *ἔοικε δὲ τοῖς ἀνθρώποις κτέ.* to find man again adduced as a type: although in 422 a 1 sq. by mentioning respiration of "animals which receive the air" A. certainly corrects the impression which b 26 *τοῖς ἀνθρώποις* suggests, if literally interpreted, viz. that the olfactory organ in man is different from that of all other animals. Alex. Aphr. in his commentary on *De Sensu* (99, 16 sqq. W) supposed that in 5, 444 a 3, 8 A. had shown a similar carelessness because, while there describing the aesthetic sensation of fragrance as peculiar to man, he goes on to speak, a 19—21, of some sense of smell conditioned by respiration as being shared by man with other sanguineous air-breathing animals. It is possible to interpret 444 a 19—21 as applying to the sensation of odour in general and not of the aesthetic fragrance last mentioned. (See Mr G. R. T. Ross *ad loc.*) But the context favours Alexander's interpretation, and in any case A. cannot be acquitted of negligence in not indicating the transition to odour in general.

b 19. **ὥστε τὰ ἄναιμα.** Bloodless animals do not inhale breath. If, therefore, such inhalation is necessary to smelling (as it certainly is in the case of man and air-breathing animals generally), bloodless animals cannot smell. But such a sweeping conclusion is contrary to the facts, as above stated (b 10 sqq.). What alternatives are possible? We may say they perceive odour, not by the sense of smell, but by a sixth sense. This hypothesis, introduced by *ὥστε*, proves to be untenable. To perceive odour *is* to smell: cf. 424 b 5 sq. If this way of escape be cut off, the only explanation consonant with the facts is that

given b 25 sq. *infra* (cf. *De Sensu* 5, 444 b 20 sq.): bloodless animals smell, but without inhaling breath.

b 20 ἂν...21 ἔχοι. The potential optative states the inference: "would have" = "must have on that supposition." Cf. 412 a 17, 424 a 26 and *note* on 403 a 9. The implied condition is best seen from Plato *Apol.* 28 B, C *φαῦλοι γὰρ ἂν τῷ γε σῷ λόγῳ εἶεν.*

b 21. ἀλλ' ἀδύνατον. More clearly in 424 b 5 referred to above: *εἰ δὲ τὸ ὀσφραντὸν ὀσμή, εἴ τι ποιεῖ, τὴν ὄσφρησιν ἡ ὀσμὴ ποιεῖ· ὥστε τῶν ἀδυνάτων ὀσφρανθῆναι οὐθὲν οἷόν τε πάσχειν ὑπ' ὀδμῆς*, and 424 b 16. Cf. also 425 b 17 *εἰ γὰρ τὸ τῇ ὄψει αἰσθάνεσθαί ἐστιν ὁρᾶν.*

b 23. ἔτι δὲ καὶ φθειρόμενα φαίνεται, int. *τὰ ἄναιμα.* A second argument to prove that bloodless animals do smell without inhaling breath. A. seems to have hesitated as to whether it is the smell that destroys in such cases. The argument here implies that it is; in 435 b 9 sqq. it is the organ of smell, and not the animal itself that is destroyed. Cf. 424 a 29, b 10 sq., where see *notes*, and *De Sensu* 5, 444 b 28 sqq. (see *note* on 421 b 13) *ὁμοίως δὲ καὶ τῶν ἄλλων ζῴων ὁτιοῦν οὐδὲν δυσχεραίνει τῶν καθ' αὑτὰ δυσωδῶν τὴν ὀσμήν, ἂν μή τι τύχῃ φθαρτικὸν ὄν. ὑπὸ τούτων δ' ὁμοίως φθείρεται καθάπερ καὶ οἱ ἄνθρωποι ὑπὸ τῆς τῶν ἀνθράκων ἀτμίδος καρηβαροῦσι καὶ φθείρονται πολλάκις· οὕτως ὑπὸ τῆς τοῦ θείου δυνάμεως καὶ τῶν ἀσφαλτωδῶν φθείρεται τἆλλα ζῷα, καὶ φεύγει διὰ τὸ πάθος.*

b 25. ὀσφραίνεσθαι μὲν οὖν, int. *τὰ ἄναιμα.*

b 27. τὸ αἰσθητήριον τοῦτο, "the olfactory organ." A. goes on to show that the part played by the nostril is analogous to that of the eyelid. Hard-eyed animals are destitute of eyelids and perceive, however imperfectly, without the previous action of removing an obstruction, *εὐθέως ὁρᾷ* (421 b 31). Similarly the animals with which man is contrasted have no nostril to dilate and do not inhale air in order to smell. **τῶν ἄλλων ζῴων.** This is not true of all other animals. Them. (69, 29 H., 127, 23 Sp.) vaguely gives *τὰ ἔντομα* (insecta), for "the other animals" as opposed to *τὰ ἔναιμα*, sanguineous animals: *ἔοικεν οὖν τοῖς ἐναίμοις διαφέρειν τὸ αἰσθητήριον τοῦτο τῶν ἐντόμων.* Thus it seems that he found it necessary to render more precise the antithesis between "man" and "the other animals," which I prefer to treat as one more instance of A.'s carelessness in matters of detail. Philop., when he comes to explain 421 b 26, opposes *τὰ ἀναπνέοντα* to *τὰ μὴ ἀναπνέοντα* (395, 8, 10).

b 28. τὰ μὲν γάρ, int. *ὄμματα τῶν ἀνθρώπων.* With the neuter article *τὰ* it would be equally easy to understand *τῶν ζῴων*, the group of animals, including man, which is contrasted with *τὰ σκληρόφθαλμα.* But, on the whole, the former view seems the more natural, and, if this is chosen, no change of gender is involved in *κινήσας* or *ἀνασπάσας*, but only the quite usual change of number.

b 29. φράγμα, "a fence or protection." In *De Part. An.* II. 13, 657 a 25 it is called *φυλακή*: *καὶ οἱ μὲν ἄνθρωποι καὶ οἱ ὄρνιθες καὶ τὰ ζῳοτόκα καὶ τὰ ᾠοτόκα τῶν τετραπόδων φυλακὴν ἔχουσι τῆς ὄψεως.* **ἔλυτρον.** The phrase in the *De Sensu* 5, 444 b 22 is *ὥσπερ πῶμά τι*, "lid" or "cover." **ἃ.** The relative is the object of the two participles *κινήσας* and *ἀνασπάσας*, the verb *ὁρᾷ* being used absolutely.

b 30. ἀνασπάσας οὐχ ὁρᾷ, int. *ὁ ἄνθρωπος* or *ὁ ὁρῶν* or simply *τις.* See *note* on 403 a 22.

b 31. ἀλλ' εὐθέως ὁρᾷ τὰ γινόμενα, see without any such delay: they have not to wait to lift the eyelid before seeing. Cf. *De Sensu* 5, 444 b 27 *ἀλλ' ὁρᾷ ἐκ τοῦ δυνατοῦ ὄντος αὐτοῦ* [leg. *αὐτοῖς*] *εὐθύς.* **ἐν τῷ διαφανεῖ,** in air or water, animals being supposed to live in the one element or in the other: cf. 435 b 21 *ἐπεὶ ἐν ἀέρι καὶ ὕδατι, ὅπως ὁρᾷ, ὅλως δ' ἐπεὶ ἐν διαφανεῖ*, 423 a 29—b 1, 422 a 11.

422 a 1 ἀκάλυφες εἶναι...2 ἔχειν ἐπικάλυμμα. These infinitives depend on *ἔοικε* continued or understood from above (b 26).

a 2. ὃ ἀναπνεόντων ἀποκαλύπτεσθαι. The same uncertainty arises in regard to *τοῖς μὲν...τοῖς δὲ* here as was noticed above in *note* on 421 b 28. Them. completes *τοῖς μὲν ἐντόμοις...τοῖς δὲ ἀναπνέουσιν*. Philop. understands as *τὰ μὴ ἀναπνέοντα ζῷα* opposed to *τὰ ἀναπνέοντα*, which, as before, he supposes man to represent: (395, 8) *οὕτω καὶ ἐπὶ τῆς ὀσφρήσεως τὰ μὲν ἀναπνέοντα τῶν ζῴων ἐοίκασι προκάλυμμά τι καὶ ἔλυτρον τοῦ ὀσφραντικοῦ μορίου ἔχειν ἀσθενεστέρου κατὰ τὸ εἰκὸς τυγχάνοντος, τοῖς δὲ μὴ ἀναπνέουσιν ἀκάλυφές τε εἶναι τὸ αἰσθητήριον τοῦτο.*

a 4. ἐν τῷ ὑγρῷ. Here and in the next line these words must mean "in the water," *not* "in what is liquid" in general, which would include air. Man and air-breathing animals can smell in the air, but not in the water.

a 6. ἔστι δ'...τοῦ ὑγροῦ. The partitive genitives *ξηροῦ* and *ὑγροῦ* are used predicatively. See *note* on 402 a 1. Odour ranks with, belongs to, or consists of the solid and dry, flavour of the liquid and moist. The quality denoted by *ξηρὸν* requires some limitation: elsewhere it is called specifically *τὸ ἔγχυμον ξηρόν*. Simpl. (154, 30) *ἐν γὰρ τῷ διόσμῳ ἐναποπλυνόμενον τὸ ἔγχυμον ξηρὸν τὸ ὀσφραντὸν ἐργάζεται, ὡς ἐν τῷ Περὶ αἰσθήσεως καὶ αἰσθητῶν ἐρεῖ· τὸ δὲ γευστὸν κἂν ξηρὸν ᾖ, οὐ γίνεται αἰσθητὸν τῇ γεύσει κατὰ τὸν χυμὸν μὴ ὑγρανθέν.* Cf. Soph. 93, 11—31, who remarks that *τὸ ξηρὸν* is not to be understood as wholly destitute of moisture nor *τὸ ὑγρὸν* as wholly destitute of dryness: odour is preponderantly solid and dry, flavour preponderantly the reverse. It must be remembered that air as well as water is *ὑγρόν*. The summary statement in the text receives much-needed elucidation from the explanation afforded by *De Sensu*, c. 5. A. there says that odours correspond to flavours and their operation on sense must be similarly explained: (442 b 27) *τὸν αὐτὸν δὲ τρόπον δεῖ νοῆσαι καὶ περὶ τὰς ὀσμάς· ὅπερ γὰρ ποιεῖ ἐν τῷ ὑγρῷ τὸ ξηρόν, τοῦτο ποιεῖ ἐν ἄλλῳ γένει τὸ ἔγχυμον ὑγρόν, ἐν ἀέρι καὶ ὕδατι ὁμοίως,* (443 a 6) *εἰ οὖν τις θείη καὶ τὸν ἀέρα καὶ τὸ ὕδωρ ἄμφω ὑγρά, εἴη ἂν ἡ ἐν ὑγρῷ τοῦ ἐγχύμου ξηροῦ φύσις ὀσμή, καὶ ὀσφραντὸν τὸ τοιοῦτον,* (443 b 3) *ὅτι μὲν οὖν ἐνδέχεται ἀπολαύειν τὸ ὑγρὸν καὶ τὸ ἐν τῷ πνεύματι καὶ τὸ ἐν τῷ ὕδατι καὶ πάσχειν τι ὑπὸ τῆς ἐγχύμου ξηρότητος, οὐκ ἄδηλον· καὶ γὰρ ὁ ἀὴρ ὑγρὸν τὴν φύσιν ἐστίν. ἔτι δ' εἴπερ ὁμοίως ἐν τοῖς ὑγροῖς ποιεῖ καὶ ἐν τῷ ἀέρι οἷον ἀποπλυνόμενον τὸ ξηρόν, φανερὸν ὅτι δεῖ ἀνάλογον εἶναι τὰς ὀσμὰς τοῖς χυμοῖς. ἀλλὰ μὴν τοῦτό γε ἐπ' ἐνίων συμβέβηκεν· καὶ γὰρ δριμεῖαι καὶ γλυκεῖαί εἰσιν ὀσμαὶ καὶ αὐστηραὶ καὶ στρυφναὶ καὶ λιπαραί, καὶ τοῖς πικροῖς τὰς σαπρὰς ἄν τις ἀνάλογον εἴποι. διὸ ὥσπερ ἐκεῖνα δυσκατάποτα, τὰ σαπρὰ δυσανάπνευστά ἐστιν. δῆλον ἄρα ὅτι ὅπερ ἐν τῷ ὕδατι ὁ χυμός, τοῦτ' ἐν τῷ ἀέρι καὶ ὕδατι ἡ ὀσμή.* The medium or vehicle, whether air or water, is *ὑγρόν*, liquid, not solid. Flavour, or the dry substance possessing flavour, *τὸ ἔγχυμον ξηρόν*, when further subjected to the influence of moisture in air or water by the process of *ἀπόπλυσις*, yields odour. For it is clear, says A., that air and water can derive something from, and be affected by, the dry substance possessed of flavour, which has been washed and, as it were, dissolved in them. Odour is perceived when the dry thing possessed of flavour affects the animal by the medium of air or water (both conceived as "moist or liquid") without itself being moist. Flavour is perceived when the thing possessed of flavour, being itself moist or moistened, is touched by the tongue.

a 7. δυνάμει τοιοῦτον, i.e. *ξηρόν*, in accordance with the principle that the sense is potentially what the sensible object is actually: cf. 418 a 3 sqq.

CHAPTER X.

422 a 8—33. The object of taste is a species of tangible, taste being a variety of touch. Hence the object of taste, as of touch, is not perceived through any foreign medium. Flavour, the object of taste, is conveyed in the liquid as its vehicle, and liquid is something tangible [§ 1]. If we lived in water, the water which is the vehicle of flavour would still not be a medium to tell us of sweetness in it: herein lies a marked contrast to our perception of colour. In taste there is nothing corresponding to the medium of sight. But the substance in which it resides must be dissolved before flavour can act upon the sense [§ 2]. On the analogy of the other senses, objects of taste must be understood to include that which can hardly be tasted at all and that which has a bad, i.e. pernicious or destructive flavour [§ 3].

422 a 9. διὰ τοῦ μεταξὺ ἀλλοτρίου ὄντος σώματος, that is, a medium consisting of a body foreign to the percipient. The common characteristic of touch and taste is that they have no extrinsic medium. But from c. 11 we learn that "flesh" is the medium, though not an external medium, of touch and taste. For the relation of taste to touch and of flavour to tangible cf. 421 a 18 sq., 414 b 11.

a 10. οὐδὲ γὰρ ἡ ἁφή, int. *διὰ τοῦ μεταξὺ ἀλλοτρίου ὄντος σώματός ἐστιν* or *γίνεται*.

a 10. καὶ τὸ σῶμα δὲ ἐν ᾧ ὁ χυμός, τὸ γευστόν, ἐν ὑγρῷ ὡς ὕλῃ. A. here enunciates his own view of *τὸ γευστόν* (somewhat inaccurately, as we shall presently see). From *De Sensu*, c. 4 we learn that this is one of three alternative views there under examination. The other two are (1) that of Empedocles that water contains in itself the various flavours, imperceptible by reason of their minuteness, and (2) that there is in water a matter which is a sort of universal reservoir of flavour germs. These two theories, there refuted (441 a 3—a 20), are here left unnoticed.

The inaccuracy above mentioned lies in **ἐν ὑγρῷ ὡς ὕλῃ**. It is quite clear both from the rest of this chapter and from the parallel discussion in *De Sensu*, c. 4 that it is flavour, the proper object of taste, which is *in* liquid, as matter, i.e. which has liquid for its matter. In the *De Sensu* 441 b 19 flavour (*χυμὸς*) is defined as *τὸ γιγνόμενον ὑπὸ τοῦ εἰρημένου ξηροῦ πάθος ἐν τῷ ὑγρῷ τῆς γεύσεως τῆς κατὰ δύναμιν ἀλλοιωτικὸν εἰς ἐνέργειαν*, "the quality arising in that which is moist through the action of the aforesaid dry, such quality having the capacity of converting potential taste into actual." Flavour is thus clearly a quality or property in the liquid (*ἐν τῷ ὑγρῷ*), constituting it "of a certain quality" (*ποιόν τι*), namely "flavoured." So Them. says *ποιότης γὰρ ὑγροῦ ὁ χυμὸς* (70, 33 H., 129, 21 Sp.) and Alex. Aphr. *De An.* 54, 5 *ὑγρὸν δὲ ὁ χυμός, ὅτι ὕλη τῇ ποιότητι ταύτῃ τὸ ὑγρὸν ὕδωρ γίνεται. οὐδὲν γὰρ γευστὸν ἄνευ ὑγρότητος. τὸ γὰρ ὕδωρ ἄχυμον ὂν καθ' αὑτὸ κτέ.* In the text of our present passage, however, it is not as it should be, the flavour, but the body possessing the flavour which is said to be "in liquid" as its matter (i.e. to have liquid for its matter). This is an inaccuracy of phrase. Philop. in his interpretation has given what A. ought to have said and probably meant to say: (398, 33) *τὸ γὰρ σῶμα ἐν ᾧ ὡς ἐν ὕλῃ τὸ εἶναι ἔχει ὁ χυμός, ὅσπερ ἐστὶ γευστόν, ὑγρόν ἐστιν*: "for the body in which, as in its matter, flavour, which is the proper object of taste, has its being, is moist." No doubt solid bodies have flavour, but they are not gustable without a liquid

vehicle, in the last resort, the saliva. If the gustable is a liquid, then its particles mix with and flavour water, which, in itself, is flavourless. Flavoured bodies, if solid, are dissolved in, if liquid, are mixed in, the flavourless liquid, water. Sometimes colour, sound etc. are said to be *αἰσθητά*, sometimes the bodies possessing these qualities. Our text presents the case for taste in analogy with the latter mode of statement. Cf. 424 a 22 *ἡ αἴσθησις ἑκάστου ὑπὸ τοῦ ἔχοντος χρῶμα ἢ χυμὸν ἢ ψόφον πάσχει*: cf. *note* on 419 b 6. This would suggest that with the words *τὸ σῶμα τὸ γευστὸν* in our present text should be understood the qualification *ᾗ γευστόν*. In *Metaph.* 1016 a 22 after *οἱ χυμοὶ πάντες λέγονται ἕν*, A. proceeds *οἷον ἔλαιον οἶνος καὶ τὰ τηκτά*, thus giving the bodies as instances of the flavours. This is a complete departure from the position taken up in II., c. 6.

a 10. καὶ...δὲ = "and again." The medium through which our perception takes place is a part of our body: and again, the moisture, which is the vehicle and, in a sense, the medium of flavour, is not such in the sense in which water or air is the medium of odour. The difference is plain if we imagine how things would be were water the element in which we lived. Then we should perceive both odour and flavour by means of water, but not in the same way: the latter would be perceived by the mixing of the body which has flavour with the water. Water would then be a true medium for odour, but only a vehicle for flavour. Cf. *De Sensu* 6, 447 a 6 *ἦν δ' ἂν καὶ τὸ γεύεσθαι ὥσπερ ἡ ὀσμή, εἰ ἐν ὑγρῷ ἦμεν καὶ πορρωτέρω πρὶν θιγεῖν αὐτοῦ ᾐσθανόμεθα.* **ἐν ᾧ...11 ἐν ὑγρῷ.** The preposition is differently used in these two cases. Flavour is an attribute of the thing tasted and, as such, resides in, or is predicable of, its subject. This might have been expressed thus: *κατὰ τοῦ γευστοῦ σώματος ὁ χυμὸς κατηγορεῖται.* But (according to A.) what is tasted is always something liquid or liquefied. Thus flavour is the form, liquid the matter, the two being inseparably united. Cf. 414 a 25—27.

a 11. ὡς ὕλῃ. Before a word in apposition and governed by a preposition Greek writers usually omit both the preposition (as here) and the article where there is one. Cf. *Phys.* IV. 12, 221 a 17 *τὰ δὲ πράγματα ὡς ἐν ἀριθμῷ τῷ χρόνῳ ἐστίν*, i.e. *ἐν τῷ χρόνῳ ὡς ἐν ἀριθμῷ*, *Metaph.* 986 b 15 *γεννῶσιν ὡς ἐξ ὕλης τοῦ ἑνός*, 1037 b 3 *τῷ ἄλλο ἐν ἄλλῳ εἶναι καὶ ὑποκειμένῳ ὡς ὕλῃ*. A. does not invariably observe the rule. See *Metaph.* 1035 b 21 *διαιρεῖται εἰς ταῦτα ὡς εἰς ὕλην*, compared with 1035 b 12 *εἰς ἃ διαιρεῖται ὡς ὕλην*: also *Metaph.* 1073 a 19 sq. *περὶ τῶν ἀριθμῶν...ὡς περὶ ἀπείρων*. Somewhat similar is the suppression of *ὡς* before *τέτταρσιν* in *Metaph.* 985 a 33 *οὐ μὴν χρῆταί γε τέτταρσιν, ἀλλ' ὡς δυσὶν οὖσι μόνοις.* **τοῦτο δ'**, int. *τὸ ὑγρόν*. It is true that *τὸ σῶμα ἐν ᾧ ὁ χυμὸς* is also *ἁπτόν*, but it may be dissolved in the liquid. Cf. 423 a 24 *τὸ δ' ὑγρὸν οὐκ ἔστιν ἄνευ σώματος.*

a 11 διὸ κἂν εἰ...12 τοῦ γλυκέος. The original reading of E is open to some doubt. It now presents *εἶμεν...αἰσθανοίμεθ'*, but *εἶμεν* is over an erasure, so that probably *ἦμεν* was first written. Of the combination, an unreal condition in the indicative (*εἰ...ἦμεν*) followed by a potential optative (*αἰσθανοίμεθ'*), Goodwin (*M. and T.*, p. 190, § 504 b) says that it seldom occurs and is not a strictly logical combination: cf. Dem. *De Cor.* XVIII. § 206 *εἰ τοῦτ' ἐπεχείρουν λέγειν, οὐκ ἔσθ' ὅστις οὐκ ἂν εἰκότως ἐπιτιμήσειέ μοι.* The *ἂν* contained in *κἂν* anticipates the *ἂν* of the apodosis, but *κἂν εἰ* often go together in A. (possibly to avoid hiatus) when no apodosis follows with which *ἂν* can be construed, e.g. 432 a 21: see Eucken, *De Particularum usu*, p. 61.

a 13. τῷ μιχθῆναι. Cf. *De Sensu* 4, 441 a 3 sqq. Water in itself is flavourless (*ἡ τοῦ ὕδατος φύσις βούλεται ἄχυμος εἶναι*). What flavours it acquires are

therefore due to admixture with it of flavoured particles and the influence of heat.

a 14. καθάπερ ἐπὶ τοῦ ποτοῦ, "as in the case of what we drink," without the aid of an external medium. We have direct and immediate perception of the flavour of a beverage.

a 14. τὸ δὲ χρῶμα. A note is here added to contrast with this direct perception of flavour the case of sight, where the object, colour, is farthest removed from the percipient and the necessity of a medium is most undeniable. Cf. 418 b 15, where it is denied that light is an emanation, *ἀπορροή*. Them., in his paraphrase, remarks that, though we taste the beverages in a liquid vehicle, the liquid is not the medium, and though it has received the flavour of the beverage, it has not received it in the same way as the transparent medium receives colours: (70, 29 H., 129, 15 Sp.) *αὐτοῦ* (int. *τοῦ ὑγροῦ*) *δεξαμένου τὸν χυμόν, δεξαμένου δὲ οὐχ ὡς τὸ διαφανὲς τὰ χρώματα.* He then proceeds: the colours are not seen because they are mixed with the air or because there is any emanation from them which is mingled with the transparent medium (70, 30 H., 129, 17 Sp.) *οὐ γὰρ οὕτως ὁρᾶται τὰ χρώματα τῷ ἀναμίγνυσθαι πρὸς τὸν ἀέρα ἢ ἀπορρεῖν τὶ αὐτῶν καὶ ἀνακίρνασθαι πρὸς τὸ διαφανές*, flavour being in fact a determining quality of liquid, *ποιότης γὰρ ὑγροῦ ὁ χυμός, ἀλλ' οὐχ ᾗ ὑγρόν*. To the same effect Philop. 400, 12 *οὐχ οὕτως δὲ τὰ χρώματα ὁρῶμεν δι' ἀέρος ἢ δι' ὕδατος· οὐ γὰρ ἐμμίγνυνται τὰ χρώματα τῷ διαφανεῖ. οὐδὲ γὰρ ὕλη αὐτῶν γίνεται τὸ διαφανές, ὡς τῶν χυμῶν τὸ ὑγρόν, οὐδὲ κεχρωσμένον τὸ διαφανὲς τῇ ὄψει ὑποπίπτει, ἀλλὰ δι' αὐτοῦ τὰ χρώματα ὁρᾶται.*

a 15. τῷ μείγνυσθαι. That is to say by being mixed with the air (Them.). **ὡς μὲν οὖν,** i.e. *ὡς τὸ μεταξὺ ἐπὶ τῆς ὄψεως, οὐθέν ἐστιν ἐπὶ τῆς γεύσεως.* The parallel with sight (says A.) must be left incomplete: in the case of taste there is no medium, i.e. no external medium, as there was in the case of sight.

a 17. οὐθὲν...ἄνευ ὑγρότητος. No gustable object produces an actual sensation without moisture. As to *ποιεῖ αἴσθησιν* see *note* on 419 a 26. It is in virtue of moisture, *ὑγρότης*, that A. can say *Metaph.* 1016 a 22 *οἱ χυμοὶ πάντες λέγονται ἕν, οἷον ἔλαιον οἶνος καὶ τὰ τηκτά, ὅτι πάντων τὸ ἔσχατον ὑποκείμενον τὸ αὐτό· ὕδωρ γὰρ ἢ ἀὴρ πάντα ταῦτ' ἐστίν.*

a 19. εὔτηκτόν τε γὰρ...γλώττης. Cf. Them. 70, 37 H., 129, 27, Sp. *οἱ γὰρ ἅλες δυνάμει ὑγροί· ἅμα γὰρ τῷ πελάσαι τῇ γλώττῃ συντήκονται καὶ ἐξυγραίνουσι τὴν γλῶτταν.* See *note* on 422 a 6.

a 20. τοῦ τε ὁρατοῦ καὶ τοῦ ἀοράτου. Cf. 418 b 28 sqq., 421 b 3 sqq. The treatment of this topic here is much fuller than elsewhere.

a 22. λίαν λαμπροῦ. This recalls Milton's phrases "dark with excessive bright" and "brightness had made invisible" and Gray's imitation "blasted with excess of light." It is anticipated by Plato, *Rep.* 516 A, where those who have escaped from the cave are dazzled by too much light as well as blinded by the darkness of the cave when they return to it. **τοῦ σκότους,** genitive of comparison = *ἢ τὸ σκότος* [*ἀόρατόν ἐστιν*]. Cf. *Eth. Nic.* 1131 b 27.

a 25. ὥσπερ γὰρ. Either there is too little which is characteristic of the object, or too much. If there is too much, the organ is incapable of acting; see 424 a 29 *αἱ ὑπερβολαὶ φθείρουσι τὰ αἰσθητήρια*: excellens sensibile corrumpit sensum. Both the defect and the excess in the object produce insensibility in the sense.

a 26 ἀόρατον...28 ἔχῃ. Here *λέγεται* seems misplaced. The more natural order, to judge from the many parallels in *Metaph.* Δ, is *ἀόρατον λέγεται τὸ μὲν ὅλως,...τὸ δ' ἐὰν κτέ.* See last *note* on 412 a 8.

a 27. τὸ ἀδύνατον. If to any verbal in -τος the negative α- be prefixed the result will be an adjective implying impossibility. Here *τὸ ἀδύνατον* is a general term for *ἀόρατον, ἀνήκουστον, ἄγευστον, ἄπρακτον κτέ.*, what cannot be seen, heard, tasted, done etc., as the case may be: in short, with reference to sensibles, *ἀδύνατον ποιεῖν αἴσθησιν*.

a 28. ἐὰν πεφυκὸς μὴ ἔχῃ, i.e. *ἐὰν πεφυκὸς ἔχειν (ὁτιδήποτε οἷον πόδας ἢ πυρῆνα...) μὴ ἔχῃ*. The subject is quite general and therefore the participle is neuter singular. Thus *τὸ ἄπουν=τοῦτο ὃ πόδας ἔχειν πεφυκὸς μὴ ἔχῃ πόδας*, and *τὸ τυφλὸν=τοῦτο ὃ ὁρᾶν πεφυκὸς ὄψιν μὴ ἔχῃ*. Compare the account of *στέρησις* in *Metaph.* 1022 b 22 *στέρησις λέγεται ἕνα μὲν τρόπον ἐὰν μὴ ἔχῃ τι τῶν πεφυκότων ἔχεσθαι, κἂν μὴ αὐτὸ ᾖ πεφυκὸς ἔχειν, οἷον φυτὸν ὀμμάτων ἐστερῆσθαι λέγεται* (one meaning of *στέρησις* is when a thing is without something naturally possessed, though it is not its own nature to possess it; e.g. a plant is said to be without eyes). *ἕνα δ' ἐὰν πεφυκὸς ἔχειν, ἢ αὐτὸ ἢ τὸ γένος, μὴ ἔχῃ, οἷον ἄλλως ἄνθρωπος ὁ τυφλὸς ὄψεως ἐστέρηται καὶ ἀσπάλαξ*. Thus in the present case sound and smell are *ἀόρατα*. But we are concerned with such objects as might be the objects of sense and are not, owing either to excess or defect. Cf. Simpl. 156, 13—24.

a 30. τοῦτο δέ, int. *τὸ ἄγευστον*.

a 31. φθαρτικὸν τῆς γεύσεως, as we should say, "injurious to the palate." The organ may not be actually destroyed, but, *quâ* organ of taste, it is crippled and rendered useless. When it can no longer subserve its function, it is no longer a sense-organ (except equivocally: a tongue which cannot taste, an eye which cannot see, a withered hand). Cf. 416 a 5, 412 b 20 sq. **ἀρχή**, int. *τῶν χυμῶν* or *τῶν γευστῶν*. In enumerating flavours or gustables we begin with the pair "drinkable and undrinkable." With this primary sense of *ἀρχή*, starting-point, beginning, cf. e.g. 403 b 24, 413 a 20 and the use of *πρῶτος* *Metaph.* 1046 a 10 *πρὸς πρώτην μίαν* [int. *δύναμιν*] *λέγονται* [int. *δυνάμεις*].

a 32. γεῦσις γάρ τις ἀμφότερα, "for both are a sort of taste." This must mean flavour, *χυμός*, rather than *τὸ ἔχον χυμόν*. A. uses the abstract term (in the singular) for the concrete plural *γευστά*, as *ὄψις* for spectacle, thing seen: so also *ἁφή* for its object, tangible *De Sensu* 3, 439 a 8, 11 (see Alex. Aphr. *ad loc.* 41, 21 W). Compare our own double use of the words taste and smell. **τὸ μέν**, int. *τὸ ἄποτον*.

a 33. φθαρτικὴ τῆς γεύσεως. Considering that the feminine adjective forcibly suggests *γεῦσις*, it is strange to find *τῆς γεύσεως* as a genitive dependent on it. The *γεῦσις* which is *φαύλη* is the object of taste, in other words, *χυμός*, while *τῆς γεύσεως* which is governed by *φθαρτική* is the organ of taste as such, in other words, the tongue. Injury to the organ implies that the faculty is impaired, so that it makes very little difference whether *γεῦσις* here be rendered "tongue" or "faculty of tasting," and the same uncertainty attaches to *γεῦσις*, *ὄψις*, *ὄσφρησις* in 426 b 1 sq. **τὸ δέ**, int. *τὸ ποτόν*. **κατὰ φύσιν**, int. *ἐστίν*, "is natural." **κοινὸν ἁφῆς καὶ γεύσεως.** *Quâ ὑγρόν*, it is tangible, an object of touch; *quâ ἔγχυμον*, it is gustable, an object of taste.

422 a 33—b 16. The organ of taste needs to be, not actually liquid, for that is what its object is, but capable of liquefaction. Thus the tongue, if too moist or too dry, cannot taste [§ 4]. The species of flavour are various, like those of colour. The primary contrast is between sweet and bitter, answering to white and black in colour. Next come unctuous (succulent) and brackish. Intermediate (between the last pair) come the pungent, the harsh, the astringent and the acid. Potentially the faculty of taste is each of these in turn: it is the object of taste which makes them so actually [§ 5].

422 b 1. ἀνάγκη. On the principle that the sense-organ must be *δυνάμει* what the sense-object is *ἐνεργείᾳ*. Cf. 418 a 3 sq., 422 a 7.

b 4. τὸ δυνάμενον μὲν ὑγραίνεσθαι σωζόμενον, μὴ ὑγρὸν δέ, "that which is capable of becoming moist without losing its nature [i.e. its distinctive character as organ of taste], but is not really moist." That the organ of sense must be moistened we have already heard. What is new is that it must be capable while moistened of retaining its own character. The article covers the whole group of words in the lemma. One might be tempted to suggest *τὶ* for *τό*, but the fact is that the article can be used in this odd fashion, which it is difficult to formulate precisely. The participle *σωζόμενον* has the qualifying effect of an adverb with *ὑγραίνεσθαι*. Miss Alford has favoured me with the following suggestion: "May this be a development from the use of the article with the future participle, e.g. in Plato, *Rep.* 342 A *δεῖ τινὸς τέχνης τῆς τὸ ξυμφέρον εἰς ταῦτα σκεψομένης*? Compare the change of tense, without obvious change of meaning, in *Pol.* 1272 a 41 *πόρρω γ' ἀποικοῦσιν ἐν νήσῳ τῶν διαφθερούντων* and 1308 a 24 sq. *σώζονται δ' αἱ πολιτεῖαι οὐ μόνον διὰ τὸ πόρρω εἶναι τῶν διαφθειρόντων, ἀλλ' ἐνίοτε καὶ διὰ τὸ ἐγγύς*."

b 6. αὕτη. This represents *τοῦτο* attracted to the gender of the complement *ἁφή*, and the "this" stands for the attempted contact of the unduly moist tongue with the object.

b 7. τοῦ πρώτου ὑγροῦ, "the original moisture," i.e. the tongue retains the taste of the first fluid with which it has come in contact, namely the saliva. The tongue in this case tastes its own moisture, and thus is prevented from tasting anything afterwards brought in contact with it.

b 9. τοιαύτης, int. *πικρᾶς*.

b 11. ἁπλᾶ. Cf. *De Sensu* 4, 442 a 12: "again, just as the colours result from the mixture of white and black, so the flavours result from the mixture of sweet and bitter. And these flavours depend on the quantitative relation between the components mixed."

b 12. τοῦ μέν, int. *τοῦ γλυκέος*. **τοῦ δέ,** int. *τοῦ πικροῦ*.

b 13. μεταξὺ δὲ τούτων. Evidently the four flavours next mentioned are meant to be intermediate between the single pair which may be designated either "unctious" and "saline," or, if we like, "succulent" and "briny": and these four are not arranged in pairs.

b 14. σχεδόν, "approximately," Latin *fere*. Cf. 403 b 28 *σχεδὸν δύο ταῦτα*.

b 15. ὥστε τὸ γευστικὸν κτέ. Cf. 418 a 3 sq.

CHAPTER XI.

422 b 17—423 a 21. With regard to touch, two questions arise. (1) Is touch a single sense, or does it include several senses? In the latter case, the objects of touch will be various. (2) Is the sense-organ the flesh, or something internal? [§ 1]. A single sense, it might be thought, relates to a single pair of opposite qualities. Touch, however, relates to several such pairs, hot and cold, dry and moist, hard and soft, etc. Now it might be urged that this is also the case with other senses, e.g. with hearing, which distinguishes loudness and timbre as well as pitch. This is true; but then the audible qualities have a common substratum, sound. What common substratum is there for tangible qualities? [§ 2]. Next, as regards the sense-organ, the fact

that the sensation occurs simultaneously with contact is not convincing evidence. For suppose the flesh encased in a thin membrane, objects of touch would be, as before, directly felt [§ 3]; still more if this membrane became a part of the body [in fact, its flesh]. Such a medium of touch may be compared to an envelope of air surrounding the body on all sides and enabling us to have direct perception of colours, sounds, and odours: whereby seeing, hearing and smelling would apparently be reduced to a single sense. An animate body could not be constructed merely of air or water: it needs earth as well, as it must be solid; and such a compound is just what flesh is. Hence the body must be a medium [and not an organ] of touch, a medium which is part of us, and which serves more than one sense [§ 4]: as is shown by the case of the tongue. For the tongue has touch as well as taste: now if the rest of our flesh had been able to taste as well as to touch, we should have thought that the two senses, taste and touch, were one and the same [§ 5].

422 b 17. ὁ αὐτὸς λόγος, "the same account is to be given." On coming to touch, the last of the five senses, Aristotle remarks that the relation between this sense and the sensible object is the same as in the case of the former four. In Professor Beare's words (p. 189), "the sense of touching, like the other senses, is best explained if its object be first analysed and examined." Cf. 415 a 16—22. Philop., however, has a different explanation, to the effect that the same account must be given of touch as of tangible objects, namely that if touch is a single sense, then there is only one sort of tangible, while if touch includes several senses, there will be several sorts of tangible (Philop. 422, 11—21).

b 17. εἰ γὰρ ἡ ἁφὴ. Two questions are propounded. (1) Is touch a single sense or a coalition of separate senses? (2) Is flesh an organ or a medium through which an internal sense works? A. considers (1) as far as 422 b 33 *ἔνδηλον*. Each sense appears to have a pair of contraries with which it deals. Touch, however, deals with a number of contraries. Yet closer examination shows that it is only a superficial view which makes each of the other senses concerned with a single pair of contraries. Still, A. notes that there is no single correlative object of touch corresponding to sound, which is correlative of hearing. Here the first question is allowed to drop.

b 20. τὸ τοῦ ἁπτικοῦ, "the organ of the faculty of touch." There seems no ground for departing from this well-attested reading, although Bekker's conjecture *τὸ τοῦ ἁπτοῦ ἁπτικὸν* has been followed by Trendelenburg, Torstrik and Wallace.

b 21. καὶ ἐν τοῖς ἄλλοις τὸ ἀνάλογον. Cf. *Hist. An.* III. 16, 519 b 26 *σὰρξ δὲ καὶ* **τὸ παραπλησίαν ἔχον τὴν φύσιν** *τῇ σαρκὶ ἐν τοῖς ἐναίμοις πᾶσίν ἐστι μεταξὺ τοῦ δέρματος καὶ τοῦ ὀστοῦ καὶ τῶν ἀνάλογον τοῖς ὀστοῖς*, *De Part. An.* I. 5, 645 b 8 *καὶ τοῖς μὲν αἷμα, τοῖς δὲ τὸ ἀνάλογον* **τὴν αὐτὴν ἔχον δύναμιν** *ἥνπερ τοῖς ἐναίμοις τὸ αἷμα*. Cf. 421 a 17, 28. Dr Ogle, *Parts of Animals* (pp. 196, 203), takes red muscular tissue to be what A. understood by *σάρξ*. Flesh is discussed *De Part. An.* II., c. 8, where it is described 653 b 21 as *ἀρχὴ καὶ σῶμα καθ' αὑτὸ τῶν ζῴων*. After showing on teleological grounds the necessity for this b 22—30 he shows in detail b 30 sqq. from the facts of experience (*κατὰ τὴν αἴσθησιν*) that all other parts of the structure of all animals are subservient to the protection or maintenance of flesh or its analogue.

b 22. τὸ δὲ πρῶτον αἰσθητήριον, "the primary sense-organ," that is as contrasted with flesh, regarded on this hypothesis as a medium, although as part of the body it has apparently a superficial claim to be called a sense-organ. In the *Ind. Ar.* (653 b 25) Bonitz distinguishes this use of the word from the more common absolute use in which it is almost equivalent to *καθ' αὑτό* ("*πρῶτος* ubi

absolute usurpatur conferri potest cum notione et vario usu nominis ἀρχή" 652 b 35) and thus defines it: "πρῶτον relatum ad aliud id dicitur, quod alteri ita est proximum, ut nihil intercedat medium. potest haec relatio significari, πρῶτον πρὸς τὸ καθόλου, πρὸς τὸ καθ' ἕκαστον *Anal. Post.* II. 18, 99 b 9, plerumque non significatur sed ex contextu sententiarum intellegitur." According to Bonitz, when A. calls the internal organ of touch "primary" he means that it is in direct and immediate communication with the tangible object, in spite of the interposition of flesh. The phrase or an equivalent recurs 423 b 30 sq., 424 a 24, 425 b 19, and the internal organ is called ἔσχατον 426 b 16.

b 23. ἐντός. The position of the sense-organs is discussed *De Part. An.* II. 10, their position in man more particularly 656 a 13—657 a 11. The following are the most important positive statements: 656 a 27 ὅτι μὲν οὖν ἀρχὴ τῶν αἰσθήσεών ἐστιν ὁ περὶ τὴν καρδίαν τόπος, διώρισται πρότερον ἐν τοῖς περὶ αἰσθήσεως· καὶ διότι αἱ μὲν δύο φανερῶς ἠρτημέναι πρὸς τὴν καρδίαν εἰσίν, ἥ τε τῶν ἁπτῶν καὶ ἡ τῶν χυμῶν, b 24 τὴν δ' αἴσθησιν ἀπὸ τῆς καρδίας [int. ἔχει τὰ ἔχοντα τὸν ἐγκέφαλον], b 34 ἐπὶ μὲν οὖν τῆς ἁφῆς...οὐκ ἔστι τὸ πρῶτον αἰσθητήριον ἡ σάρξ καὶ τὸ τοιοῦτο μόριον, ἀλλ' ἐντός. Equally emphatic is the statement of positive doctrine in *De Iuv.* 3, 469 a 4—27. **πᾶσά τε γὰρ αἴσθησις.** This τε is taken up by δὲ b 25, ἐν δὲ τῷ ἁπτῷ: cf. *Ind. Ar.* 749 b 40 sq.

b 23. μιᾶς ἐναντιώσεως, a single contrariety, i.e. a single pair of contraries or opposite qualities. We have already seen that sight is related to light and dark, sound to loud and faint, smell to odorous and inodorous, taste to γευστὸν and ἄγευστον. But A. expands his doctrine (see 426 b 8—12), which is most clearly set forth *De Sensu* 6, 445 b 24 πᾶν δὲ τὸ αἰσθητὸν ἔχει ἐναντίωσιν, οἷον ἐν χρώματι τὸ λευκὸν καὶ τὸ μέλαν, ἐν χυμῷ γλυκὺ καὶ πικρόν· καὶ ἐν τοῖς ἄλλοις δὴ πᾶσίν ἐστιν ἔσχατα τὰ ἐναντία. τὸ μὲν οὖν συνεχὲς εἰς ἄπειρα τέμνεται ἄνισα, εἰς δ' ἴσα πεπερασμένα· τὸ δὲ μὴ καθ' αὑτὸ συνεχὲς εἰς πεπερασμένα εἴδη. The last sentence is introduced to show why the different species or kinds of quality which form the proper object of each special sense are finite in number, (445 b 21) διὰ τί πεπέρανται τὰ εἴδη καὶ χρώματος καὶ χυμοῦ καὶ φθόγγων καὶ τῶν ἄλλων αἰσθητῶν. The province of each sense is continuous, *ib.* b 29 sq. ὑπάρχει δὲ συνέχεια ἀεὶ ἐν τούτοις, and the opposite qualities form the extremities, ἔσχατα, of this continuum. Hence A. applies his general proposition, *ib.* b 23, ὧν μὲν γάρ ἐστιν ἔσχατα, ἀναγκαῖον πεπεράνθαι τὰ ἐντός. Each special sense has its own province (colour, sound, smell, flavour); in this it pronounces judgment on sensible qualities which run from one to the other extreme by imperceptible gradations. Thus sight discerns the positive quality white at one end of the scale, the negative quality black at the other, and the various shades of colour intermediate. Hearing discerns the shrillest of high notes at one end of the scale, the deepest of low notes at the other and all the varying degrees of pitch intermediate. All the qualities cognised by a single special sense, even the contrary extremes (white, black, sweet, bitter etc.), are species (τὰ μὲν πάθη ὡς εἴδη λεκτέον *De Sensu* 6, 445 b 29) homogeneous with each other, ὁμογενῆ, and heterogeneous with those cognised by any other sense: 431 a 24, *De Sensu* 7, 447 b 24—448 a 18. Cf. also *note* on 418 a 14 *supra*.

b 24. λευκοῦ καὶ μέλανος. This may be inferred from 418 b 18 φῶς ἐναντίον σκότει, 418 b 28, 29, but it is singular that it has not been explicitly stated hitherto in this treatise, as it is in *De Sensu* 3, 439 b 16 ὥσπερ οὖν ἐκεῖ τὸ μὲν φῶς τὸ δὲ σκότος, οὕτως ἐν τοῖς σώμασιν ἐγγίγνεται τὸ λευκὸν καὶ τὸ μέλαν, where A. attempts to show that the seven species of colour can all be derived from white and black blended in different proportions or one seen through another. Cf. *ib.* 4, 442 a 12, 20. **ὀξέος καὶ βαρέος.** Cf. 420 a 29.

b 25. πικροῦ καὶ γλυκέος. Cf. 422 b 11, 421 a 27. **ἐν δὲ τῷ ἁπτῷ πολλαί.** Cf. *De Part. An.* II. 1, 647 a 16 *μάλιστα γὰρ αὐτη* [int. *ἡ ἁφὴ*] *δοκεῖ πλειόνων εἶναι γενῶν, καὶ πολλὰς ἔχειν ἐναντιώσεις τὸ ὑπὸ ταύτην αἰσθητόν* [i.e. *τὸ ἁπτόν*], *θερμὸν ψυχρόν, ξηρὸν ὑγρὸν καὶ εἴ τι ἄλλο τοιοῦτον.* The variety may be reduced to two main heads (1) resistance, (2) temperature.

b 26. θερμὸν ψυχρόν. Compare the list in *De Gen. et Corr.* II. 2, 329 b 18, where are added *βαρὺ κοῦφον, γλίσχρον κραῦρον, τραχὺ λεῖον, παχὺ λεπτόν.*

b 27. ἔχει δέ τινα λύσιν. With *λύσιν* as with b 19 *ἀπορίαν* the verb *ἔχει* is impersonal: the German idiom "es giebt Etwas" is a parallel. The clause with *ὅτι* contains the partial solution of the difficulty. A. means that a sort of answer may be given by saying that each of the other special senses has likewise to deal with more than one pair of opposites. Not a satisfactory answer: cf. b 32, *ἀλλά.* Them. remarks (72, 21 H., 132, 20 Sp.) *τοῦτο μὲν οὖν ἴσως ἂν τις οὐκ ἀποχρώντως μὲν ἀλλὰ πιθανῶς διαλύσει, ὅτι...ἀλλ' οὐχ ἱκανὴ...ἡ παραμυθία· μέγεθος μὲν γὰρ καὶ σμικρότης κοινὰ πασῶν ἐστὶ τῶν αἰσθήσεων καὶ τοῦ καθ' ἑαυτὴν ἑκάστη μεγάλου καὶ μικροῦ αἰσθάνεται, λειότης δὲ καὶ τραχύτης ἤτοι λέγονται ἐκ μεταφορᾶς τῶν ἁπτῶν, ἢ τοῦ σχήματος καὶ αὗται ἂν εἶεν, εἴπερ καὶ φωνῆς σχῆμα θετέον διὰ τὸν πληττόμενον ὑπ' αὐτῆς ἀέρα· τὸ δὲ σχῆμα κοινὸν ἦν καὶ αὐτὸ αἰσθητόν.* Thus Them. regards the varieties perceived by sight and hearing as *κοινά,* not *ἴδια.* For the expression cf. *Pol.* 1281 a 41 *δόξειεν ἂν λύεσθαι καί τιν' ἔχειν ἀπορίαν, τάχα δὲ κἂν ἀλήθειαν, Metaph.* 995 a 28 *ἡ γὰρ ὕστερον εὐπορία λύσις τῶν πρότερον ἀπορουμένων ἐστί, De Caelo* II. 12, 291 b 26 *εἴ τις διὰ τὸ φιλοσοφίας διψῆν καὶ μικρὰς εὐπορίας ἀγαπᾷ περὶ ὧν τὰς μεγίστας ἔχομεν ἀπορίας.*

b 29. οὐ μόνον ὀξύτης...31 τραχύτης. The same three pairs of opposite qualities are recognised by Plato, *Tim.* 67 B, C.

b 32. τὸ ἓν τὸ ὑποκείμενον. In each of the other senses, the various qualities perceived can be reduced to a single genus. There seems however to be no one common genus to which the tangible qualities just enumerated can be subordinated. Philop. (423, 30—32) raises a doubt even as regards sight, whether phosphorescence can be brought under the same genus as colour. There is no great difference between *ὑποκείμενον τῇ ἁφῇ* and *τὰ ἀντικείμενα* in 402 b 15 and 415 a 20. Cf. 426 b 10 *τὰς τοῦ ὑποκειμένου αἰσθητοῦ διαφορὰς* and *note.*

b 34. πότερον...ἢ οὔ. This is the second main question; but its discussion serves also to elucidate the first. We shall here anticipate A.'s decision, which is that flesh is for touch the medium and not the organ of sense. Cf. *De Part. An.* II. 10, 656 b 34 as cited in *note* on 422 b 23, **ἐντός.** In subsequent passages of *De A.* Aristotle continues to speak of flesh as the organ of touch and, though this may be sometimes an accommodation to popular language and ideas, yet on the whole the conclusion of this chapter that flesh is an intra-organic medium is not incompatible with the view that flesh is in some sense also the organ of touch. The internal organ here postulated, *τὸ ἐντός* (cf. 423 b 23), in contradistinction to the surface of the body, may itself be composed of flesh. Furthermore, the hypothesis of organ and medium combined in one is distinctly formulated *De Part. An.* II. 8, 653 b 24 *ταύτης δ'* [int. *τῆς ἁφῆς*] *αἰσθητήριον τὸ τοιοῦτο μόριόν ἐστιν, ἤτοι τὸ πρῶτον, ὥσπερ ἡ κόρη τῆς ὄψεως, ἢ* **τὸ δι' οὗ συνειλημμένον,** *ὥσπερ ἂν εἴ τις προσλάβοι τῇ κόρῃ τὸ διαφανὲς πᾶν* [all the external diaphanous medium]. *ἐπὶ μὲν οὖν τῶν ἄλλων αἰσθήσεων ἀδύνατόν τε καὶ οὐδὲν προὔργου τοῦτ' ἦν ποιῆσαι τῇ φύσει, τὸ δ' ἁπτικὸν ἐξ ἀνάγκης· μόνον γὰρ ἢ μάλιστα τοῦτ' ἐστὶ σωματῶδες τῶν αἰσθητηρίων.* **εὐθέως,** directly, without any intermediary. Cf. 421 b 31.

423 a 2. ἅμα θιγγανομένων, int. *τῶν αἰσθητῶν*: genitive absolute, "simultaneously with the things being touched." **καὶ γὰρ νῦν.** In order to establish

his point that the instantaneousness of the sensation of touch by no means proves the absence of a medium, Aristotle introduces two ingenious suppositions. The first is: suppose we were to make and stretch over our flesh an artificial skin or tissue. Such a glove on the hand (Them. calls it a gauze-like web *λεπτὴν ὀθόνην*) does not impair the instantaneousness of touch, as may be verified by experiment (*καὶ...νῦν*). Now imagine (a 5 *εἰ δὲ καὶ κτέ.*) such a glove, or web, to grow on to, and become part of, the body. Perceptions would pass, if possible, still more rapidly. Cf. *De Part. An.* II. 8, 653 b 25 *τὸ δι' οὗ συνειλημμένον, ὥσπερ ἂν εἴ τις προσλάβοι τῇ κόρῃ τὸ διαφανὲς πᾶν*, cited in last *note* but one.

a 4. ἀψάμενος, "the moment it (i.e. the membrane) touches." The meaning may be a little clearer in the paraphrase of Themistius (73, 1 H., 133, 18 Sp.) *καὶ γὰρ νῦν εἴ τις περὶ τὴν σάρκα περιτείνειεν οἷον ὑμένα ποιήσας ἢ λεπτὴν ὀθόνην, ὅμως εὐθὺς* **ἀψαμένοις** (the moment we touch) *γίνεται ἔνδηλος ἡ θερμότης ἢ ἡ ψυχρότης κτέ.*, and *ἀψαμένοις* would be preferable in our text to the proposals *ἀψαμένου* (Torst.) and *ἀψαμένῳ* (Trend.). But no change is needed. **ἐνσημαίνει**, int. *ὁ ὑμήν*, "intimates," "gives a sign," "communicates." Observe the indicative after the previous optative *περιτείνειεν*. Cf. Thuc. II. 39, 4 *καίτοι εἰ ῥᾳθυμίᾳ μᾶλλον ἢ πόνων μελέτῃ...ἐθέλοιμεν κινδυνεύειν, περιγίγνεται ἡμῖν κτέ.*, which Dionysius of Halicarnassus criticises *περὶ Θουκ. ἰδιωμ.* 12, 1. Doubtless he would have repeated his criticism in the present passage thus: *ἐνταῦθα γὰρ τὸ μὲν* **περιτείνειε** *ῥῆμα τοῦ μέλλοντός ἐστι χρόνου δηλωτικόν, τὸ δὲ* **ἐνσημαίνει** *τοῦ παρόντος· ἀκόλουθον δ' ἂν ἦν εἰ συνέζευξε τῷ* **περιτείνειε** *τὸ* **ἐνσημανεῖ**.

a 4. ἐν τούτῳ, int. *ἐν τῷ ὑμένι*. The suggestion is that so also flesh, though apparently the sense-organ, may not really be so.

a 5. συμφυὴς, "naturally adhering." The two grow together and coalesce throughout, as the tongue with the lower jaw or base of the mouth in the crocodile (*τῇ κάτω σιαγόνι συμφυής*, *De Part. An.* II. 17, 660 b 28). Cf. *infra* a 7 *περιεπεφύκει*. This is the primary meaning of *συμφυής*. For a more extended application in which the idea of growth is lost and that of direct contact or close connexion is retained see 420 a 4, 12. Thus *Pol.* 1286 a 18 *συμφυὴς* is used to express the connexion between *τὸ παθητικὸν* and reason in the human soul.

a 6. τὸ τοιοῦτο μόριον τοῦ σώματος. The part of the body which answers to the inseparable membrane of the illustration: of course the flesh is meant.

a 7. ὥσπερ ἂν εἰ. From the last supposition, Aristotle now passes on to yet another, which concerns not only the question in hand respecting the sense-organ, but also the previous question whether touch is one sense or more than one. For the web fitted to the skin he substitutes in imagination an envelope of air. If this were attached to us, we should think that we perceived colours, sounds and odours by one and the same organ, namely this enveloping air, and that the three senses, which as a fact we know to be distinct, sight, hearing and smell, were one. The effect of this illustration is to suggest that similarly touch, which appears to be a single sense, may be a plurality of senses. Flesh for touch will be like air for those three senses in the case supposed, an intra-organic medium (*δι' οὗ*) attached to the percipient, *περιεπεφύκει*.

a 8. ἑνί τινι, "by means of a single thing," the envelope of air in question. This would be assumed to be the single organ of the three senses then considered as merged in one.

a 10. διὰ τὸ διωρίσθαι. The subject to *διωρίσθαι* is the antecedent to *δι' οὗ*, namely that which is in each case the medium, as *τὸ διηχὲς* for sound, *τὸ διαφανὲς* for sight, *τὸ διοσμὸν* for smell. With *διωρίσθαι* understand *τοῦ σώματος* (in

contrast to προσπεφυκέναι or περιπεφυκέναι). **αἱ κινήσεις.** A comparison with a 16 αἰσθήσεις shows that the two terms are here identical in meaning. Cf. 417 a 14—18, 420 a 33, 426 a 2 sqq., 426 b 29—427 a 1, 425 b 25 in the light of 428 b 10—429 a 2.

a 11. φανερὰ...ἕτερα ὄντα, "it is evident that the organs of the three senses mentioned are distinct," i.e. are distinct from each other: quum vero aër a corpore animantis separatus sit, non latet nos sensus illos esse tres (Torstrik, p. 159). We are able to distinguish between the organs of sight, hearing and smell. This remark carries several consequences. What does A. intend? That flesh, like the supposed envelope of air, is not an organ but a medium, and that an internal organ may work through this medium. Air congenitally united to our bodies, as in the case supposed, would still be a medium and we should not then be able to discriminate between the organs of the three senses. The implication is that it is for a similar reason, because it is united with us, that the flesh is popularly regarded as an organ. How can we be sure it is anything more than an inseparable medium? There is, however, another possible inference, which must not be overlooked. The distinctness of the three sense-organs, as things are, might suggest a totally different conclusion, viz. the unity of sense. What seem to us three distinct senses, seeing, hearing and smelling, may have to be referred hereafter to one internal sense, with its organ in the region of the heart. This is possible, even if less likely at this point in the treatise. But in this chapter A. doubtless has in his mind the conception of *sensus communis*, to be developed in III., cc. 1, 2.

a 12. τοῦτο νῦν ἄδηλον, i.e. whether it is a fact that several distinct senses are confused in an apparently single sense. Cf. Them. (73, 19 H., 134, 14 Sp.) ἐπὶ δὲ τῆς ἁφῆς ἄδηλον εἰ πλείω ἢ ἕν. He proceeds to make A.'s meaning a little more explicit thus: τί γὰρ κωλύει πλείω μὲν εἶναι, τὴν σάρκα δὲ ἅπασιν ἔξωθεν ὁμοίαν οὖσαν ὥσπερ ἔλυτρον περιπεπλάσθαι; "Are we any nearer the solution," A. may be supposed to ask, "of our question (b 19, 20) as to whether touch embraces more senses than one?" We might have a number of different organs working through the flesh as medium: but if so, we are unable to distinguish them. From this it follows that we cannot hope to assign the different sorts of touch to different parts of the body.

a 13 λείπεται δὲ μεικτὸν...14 τούτων εἶναι. It follows that of the composite animal body (1) earth, the solid element, (2) air and water (τούτων), the media of the telepathic senses, must be constituents. The same conclusion is more clearly expressed in 435 a 11 sqq. and the argument by which it is reached more fully stated. The body of the animate creature cannot be ἁπλοῦν, i.e. consisting of one element only. For example, it cannot be of fire (πύρινον), for fire is destructive; it cannot be of air or water, for these are media of the telepathic senses and not suitable for touch; it cannot be of earth only, for by touch we perceive hot and cold, whereas earth would only account for hard and soft. Thus it cannot be ἁπλοῦν, but must be μεικτόν.

a 14. βούλεται. See *Ind. Ar.* 140 b 41 saepe per βούλεται εἶναι significatur quo quid per naturam suam tendit, sive id assequitur quo tendit, sive non plene et perfecte assequitur. Cf. *Pol.* 1261 b 12, 1295 b 25, 1289 a 32 βούλεται γὰρ ἑκατέρα κατ' ἀρετὴν συνεστάναι κεχορηγημένην, 1254 b 27, 1255 b 3. Until an example of βούλεσθαι in this sense without an infinitive following has been adduced, I am content to follow Torstrik and Biehl in inserting εἶναι in the text. The question at issue is not whether A. frequently omitted the copula, εἶναι, as readily as ἐστίν and εἰσίν. No one who has read Vahlen's note on *Poet.* 1459 b 7 will have any doubt that A. dispensed as easily with the copula as any of the Latin writers, and would have been content to take such a sentence as "fusi

hostes" for normal (Roby, *Latin Grammar* II., xxii.). The brevity of his shorthand style leads him nearly as often to omit the subject, if this can be understood. But the question here is whether *οἷον βούλεται ἡ σάρξ* or *τοῦτο βούλεται ἡ φύσις* would not naturally suggest *ποιεῖν* or *συμβαίνειν* as the verb to be understood, so that the insertion of *εἶναι* is needed to prevent misapprehension. Cf. *De Sensu* 4, 441 a 3 *ἡ μὲν οὖν τοῦ ὕδατος φύσις βούλεται ἄχυμος εἶναι*, *ib.* 7, 447 b 10 sq.

a 15. ὥστε. It has just been stated that *μεικτόν τι*, such as flesh, is necessary to the animal body, and from this it is inferred that it is the medium of touch, the organ of touch being the central organ in the region of the heart. It is obvious that the argument requires that by *τὸ σῶμα* should be understood not the whole body, but a part of it: in man, the flesh. Yet it is easy to see why *σῶμα* and not *σάρξ* was written, for A. has been speaking of the composition of the animal body in general, and not all animal bodies have flesh; some have a substitute (*τὸ ἀνάλογον*). The medium *δι' οὗ* is in this case the animal body itself or such part of it as intervenes without break of continuity between the sense (or organ) of touch (*μεταξὺ τοῦ ἁπτικοῦ*) and the tangible object, *καὶ τοῦ ἁπτοῦ* being of course understood. See *Ind. Ar.* 460 b 53 *τὸ μεταξύ*, vel *τὸ μεταξὺ τῆς αἰσθήσεως*, vel *τὸ μεταξὺ τοῦ αἰσθητηρίου*, id quod interpositum inter *τὸ αἰσθητήριον* et *τὸ αἰσθητόν* utrumque coniungit. Bz. cites not only our present passage 423 a 1—b 26 and 424 b 29, but also *De Sensu* 3, 440 a 18 *κρεῖττον φάναι τῷ κινεῖσθαι τὸ μεταξὺ τῆς αἰσθήσεως ὑπὸ τοῦ αἰσθητοῦ γίνεσθαι τὴν αἴσθησιν*, *ib.* 6, 447 a 8 *ὧν ἐστὶ μεταξὺ τοῦ αἰσθητηρίου*, where there is a medium between the organ and the object. When *μεταξὺ* is used as a preposition, one of the termini is often suppressed. Whether *τὸ* be inserted before *μεταξὺ* or not, the words *μεταξὺ τοῦ ἁπτικοῦ προσπεφυκὸς* form an attributive clause which qualifies *σῶμα*. See critical *notes*.

a 16. προσπεφυκός. This participle, like the adjective *συμφυές*, denotes an integral or inseparable part of the organism, something which may be regarded as distinct, but is by natural growth of one piece with the rest. The word could appropriately be used of the supposed membrane, or of the "flesh" as attached to the rest of the body. It is so used in reference to the visual organ of hard-eyed animals *De Part. An.* II. 13, 657 b 34, which see *οἷον διὰ τοῦ βλεφάρου προσπεφυκότος*: *ib.* II. 17, 661 a 11 the word *προσπεφυκὸς* is used of the tongue and opposed to *ἀπολελυμένον*, meaning a tongue which is fixed in its position in the mouth, as opposed to one free from attachments, which can be protruded and retracted. Cf. Them. 73, 27 H., 134, 26 Sp. *εἰ γὰρ πᾶσα αἴσθησις διὰ τοῦ μεταξύ, καὶ ἡ ἁφή· τοῦ δὲ ἁπτοῦ καὶ τοῦ ἁπτικοῦ οὐδέν ἐστιν ἕτερον μεταξὺ ἢ τὸ σῶμα, τὸ σῶμα ἄρα τὸ μεταξύ, δι' οὗ γίνεται ἡ ἀντίληψις. διοίσει δὲ τοῦ ἀέρος τε καὶ τοῦ ὕδατος...ὅτι μὴ κεχώρισται ὥσπερ ἐκεῖνα, ἀλλ' ἔστι συμφυὲς τῷ ζῴῳ.* But *συμφυὲς τῷ ζῴῳ* is not more correct than A.'s own expression. The fact is that one part of the animal body is attached to the rest to serve as a medium to the sense of touch.

a 18. αἰσθάνεται. I suppose the subject to be the tongue, which will then be said to perceive all tangible qualities at the same part, e.g. the tip, as that at which it perceives flavours. Thus *καὶ* is correlative to *τὸ αὐτό*. This gives a better antithesis to a 19 *εἰ...ἡ ἄλλη σάρξ ᾐσθάνετο*. So clearly Simpl. 162, 33 sqq. and apparently Philop. 427, 29 *ἡ δὲ γλῶττα καὶ πάντων τῶν ἁπτῶν ἀντιλαμβάνεται καὶ πρὸς τούτοις χυμῶν*. Others make *κατὰ τὸ αὐτὸ μόριον* mean "with one and the same organ, viz. the tongue" and suppose *αἰσθάνεται* to have as its subject *ὁ αἰσθανόμενος* as in 423 b 25 (*bis*). Professor Beare, p. 192, translates: "for in virtue of the tongue, which is one and the same organ, one has the sensation of all the other objects of touching and also that of taste." To A. it makes no

difference whether (1) the percipient subject or (2) the special sense as part of the sensitive soul or (3) the organ of sense be said αἰσθάνεσθαι. For the tip of the tongue as preeminently sensitive to flavour cf. *Hist. An.* II. 9, 492 b 27 ἐν τῷ ἄκρῳ [int. τῆς γλώττης], *De Part. An.* II. 17, 661 a 5 τῷ ἄκρῳ μάλιστα.

a 20. νῦν δὲ δύο, int. δοκοῦσιν εἶναι.

a 21. ἀντιστρέφειν. Cf. Trend.[2]: ἀντιστρέφειν notiones dicuntur, quae inter se converti possunt, quae adeo inter se respondent, ut, quod una habeat proprium, etiam alteri adsit, ideoque altera in alterius locum substitui possit...ἀντίστροφος significat ex altera parte respondere et quasi ex adverso oppositum esse." See also Cope, *ad Rhet.* I. 1, § 1, p. 1. The word denotes an exact correspondence in detail as a facsimile or counterpart: in logic it is used of propositions "convertible." Hence whatever part of the flesh perceives flavours also perceives tangibles, but we cannot convert the proposition and affirm that whatever part perceives tangibles also perceives flavours. Cf. 406 a 32, *De Interpr.* 13, 22 a 14—16, *Metaph.* 1016 b 28, Them. (74, 2 H., 135, 12—15 Sp.) νῦν δὲ δύο φαίνονται διὰ τὸ μὴ ἀντιστρέφειν τὰ ὄργανα, ἀλλὰ δι' οὗ μὲν μορίου τῶν χυμῶν αἰσθανόμεθα, διὰ τοῦ αὐτοῦ καὶ τῶν ἁπτῶν· δι' οὗ δὲ τῶν ἁπτῶν, οὐ διὰ παντὸς καὶ τῶν χυμῶν. Philop. remarks (422, 6) οὐχ ὡς γλῶττα ἁπτική ἐστιν, ἀλλ' ᾗ πᾶν τὸ σῶμα τοιοῦτόν ἐστιν.

423 a 22—b 27. Even liquids and fluids have body: which implies three dimensions. Therefore two solid bodies immersed in water (or, for the matter of that, in air) cannot, strictly speaking, ever touch one another: there must always be, although we do not perceive it, a film or layer of fluid or of air interposed [§ 6]. Returning, then, to the question whether touch and taste operate, like the other three senses, through a medium, or not, we decide that hard and soft are perceived through a medium, just as much as the resonant and the odorous; but in the case of the latter, owing to the distance of the object, we are aware of the medium, while the former are close at hand and so we fail to notice the medium. In fact the thin film of air or water which, unperceived, separates bodies apparently in contact, is like the membrane imagined in the illustration given above [§ 7]. The real difference between touch and taste on the one hand, and the three remaining senses on the other, is that in the case of the latter, the medium is acted upon by the object and in turn acts upon the sense-organ, while in touch and taste the medium plays no such part: organ and medium are acted upon together [§ 8]. That the flesh plays the part of medium in touch and the tongue in taste is also made clear by the crucial experiment that an object placed in close contact with the flesh or the tongue is perceived if tangible or gustable. But when the objects of the other three senses are so placed in close contact with the respective sense-organs there is no perception [§ 9].

423 a 22. ἀπορήσειε δ' ἄν τις. Here A. takes up a new question. Apart from the correspondence between flesh and air, we must acknowledge that in touch there is never actual contact between sense-organ and object; for we must take account of a film of the medium (air or water) interposed. ἀπορήσειε δ' ἄν τις is taken up at 423 b 1 by πότερον οὖν πάντων ὁμοίως ἐστὶν ἡ αἴσθησις ἢ ἄλλων ἄλλως. **εἰ**, "if, as is a fact" (*siquidem*). **βάθος...23 τὸ τρίτον μέγεθος.** Cf. *De Caelo* I. 1, 268 a 7 μεγέθους δὲ τὸ μὲν ἐφ' ἓν [int. διαιρετὸν] γραμμή, τὸ δ' ἐπὶ δύο ἐπίπεδον, τὸ δ' ἐπὶ τρία σῶμα, *Metaph.* 1020 a 11 μεγέθους δὲ τὸ μὲν ἐφ' ἓν συνεχὲς μῆκος, τὸ δ' ἐπὶ δύο πλάτος, τὸ δ' ἐπὶ τρία βάθος, *Top.* VII. 5, 142 b 24 ὁ τοῦ σώματος ὁρισμός, τὸ ἔχον τρεῖς διαστάσεις, *De Caelo* II. 2, 284 b 21 λέγω δὲ τὰ τρία τὸ ἄνω καὶ κάτω, καὶ τὸ πρόσθιον καὶ τὸ ἀντικείμενον, καὶ τὸ δεξιὸν καὶ τὸ ἀριστερόν· ταύτας γὰρ τὰς διαστάσεις εὔλογον ὑπάρχειν τοῖς σώμασι τοῖς τελείοις πάσας. ἔστι

δὲ τὸ μὲν ἄνω τοῦ μήκους ἀρχή, τὸ δὲ δεξιὸν τοῦ πλάτους, τὸ δὲ πρόσθεν τοῦ βάθους. Cf. also *De Gen. et Corr.* I. 2, 315 b 28 sqq., where the atomistic analysis of solids is contrasted with that of Plato in the *Timaeus*.

a 23. ὧν...δύο σωμάτων. The construction is: τὰ δύο σώματα ὧν μεταξύ ἐστι σῶμά τι, ταῦτα οὐκ ἐνδέχεται ἀλλήλων ἅπτεσθαι. The antecedent σώματα is attracted into the case of the relative ὧν and taken up again by ταῦτα.

a 24. οὐκ ἔστιν ἄνευ σώματος, "cannot exist apart from body," in which as a quality it inheres. A. constantly reiterates that qualities and attributes are not independent entities: πάθη and συμβεβηκότα cannot be separated from οὐσία or τόδε τι. Liquid implies liquid body, which must have three dimensions.

a 25. τὸ διερόν. The word is defined in *De Gen. et Corr.* II. 2, 330 a 16 sq. as τὸ ἔχον ἀλλοτρίαν ὑγρότητα ἐπιπολῆς, βεβρεγμένον δὲ τὸ εἰς βάθος...τὸ μὲν διερὸν ἔσται τοῦ ὑγροῦ. It seems, in the context, peculiarly applicable to a solid body like fish immersed in water; so that εἰ διερὸν διεροῦ ἅπτεται (*infra* 423 b 1) practically means "whether fish touches fish," or any two things immersed in water which are in apparent contact.

a 26. μὴ ξηρῶν τῶν ἄκρων ὄντων. This condition limits the reference to things actually exposed to the water, and excludes the case of things in contact with one another inside a waterproof chest, bottle or sack. The ἄκρα are the "outermost parts," that is the "outside," in contrast with the "interior." While a thing thus wet on the outside is διερόν, a thing wetted through and through (βεβρεγμένον) is defined as **τὸ εἰς βάθος** (ἀλλοτρίαν ὑγρότητα ἔχον) *De Gen. et Corr., loc. cit.*

a 27. μεταξύ, "between them," i.e. in between their apparently contiguous surfaces. **τὰ ἔσχατα** means the same as τὰ ἄκρα above, "outside surfaces," not "extremities." Cf. *infra* 423 b 22 τοῦ ὄμματος...τὸ ἔσχατον.

a 28. εἰ δὲ τοῦτ'...ὕδατι, τὸν αὐτὸν κτέ. A comma seems quite sufficient here. Bekker puts a period and Biehl a colon.

a 29. τὸν αὐτὸν δὲ τρόπον, int. ἀδύνατόν ἐστιν ἅψασθαι ἄλλο ἄλλου.

a 30. λανθάνει δὲ μᾶλλον, we fail to notice, we are less ready to discern it. What *we* are more apt to overlook is that there is no actual contact even of things in air.

a 31. ὥσπερ καὶ κτέ., i.e. ὥσπερ καὶ τὰ ἐν τῷ ὕδατι ζῷα **λανθάνει** εἰ.

423 b 1. εἰ. For εἰ = "the fact that," cf. 421 b 13.

b 1. πότερον οὖν. Though the question is really dependent on ἀπορήσειε δ' ἄν τις 423 a 22, the οὖν (resumptive after a digression) shows that the writer is unconscious of this dependence, and the whole paragraph becomes slightly anacoluthic. A. is of opinion that the dissimilarity in the manner of perception is only apparent. Flesh, he thinks, is the medium of touch and taste, and the objects of these two senses are really at a distance from the seat of perception. A. leads up to and brings out the view that there is never actual contact. The membrane of the illustration has a counterpart in the film of air or water which separates two things supposed to be in contact.

b 4. τὸ δ', "but this." Although no τὸ μὲν has preceded, the article, as in πρὸ τοῦ, τὸ καὶ τὸ, is really a demonstrative pronoun. Cf. 408 b 5.

b 6. τὰ μέν, i.e. τὸ ψοφητικὸν καὶ τὸ ὁρατὸν καὶ τὸ ὀσφραντόν, while **τὰ δ'** = τὸ σκληρὸν καὶ τὸ μαλακόν. **διὸ,** i.e. because they are so near.

b 7. αἰσθανόμεθά γε. The fact is so at any rate, whether we notice it or not.

b 8. ἐπὶ τούτων, i.e. in the case of "hard" and "soft." This is the immediate reference of the pronoun, though "hard" and "soft" merely stand as representative of all objects of touch and taste. **καὶ πρότερον,** *supra* 423 a 2 sqq.

b 9. λανθάνοντος. The participle agrees with *ὑμένος*. This seems a simpler view than to make it a genitive absolute, though in translation we may conveniently treat it as if it were such: "the fact of its being interposed escaping us," "of whose intervention we are not conscious."

b 11. δοκοῦμεν, "we fancy," this is the ordinary opinion (*καθάπερ νῦν δοκεῖ* 423 b 2). Though incorrect in not taking account of the film, the ordinary view is nevertheless substantially correct, because there is a distinction between the three senses of sight, hearing and smell, which operate at a distance, and the two senses of touch and taste, which operate near at hand. A. himself so far sympathises with and shares the popular belief that, in spite of all his efforts in this chapter to demonstrate a medium for touch, we find him talking like other people of immediate contact with the tangible 424 b 27 *καὶ ὅσων μὲν αὐτῶν ἁπτόμενοι αἰσθανόμεθα*...(b 29) *ὅσα δὲ διὰ τῶν μεταξὺ καὶ μὴ αὐτῶν ἁπτόμενοι* (by the latter he intends objects of sight, smell and hearing), 435 a 17 *ἡ δ' ἁφὴ τῷ αὐτῶν ἅπτεσθαί ἐστιν.*

b 16. οὐ γὰρ ἡ ἀσπίς. Somewhat similar is the case of motion produced *per accidens* in *Phys.* VIII. 4, 255 b 27 *ὥσπερ καὶ ἡ ἀνακλασθεῖσα σφαῖρα οὐχ ὑπὸ τοῦ τοίχου ἐκινήθη ἀλλ' ὑπὸ τοῦ βάλλοντος.* **ἅμ' ἄμφω.** The illustration chosen by A. is not particularly good; because even if, with Philop. (432, 7 sq.), we suppose the shield to be struck by a stone and not transfixed with a spear, the striking of the man's body can hardly be simultaneous with the striking of the shield. It will be seen that A. makes no attempt to show that there are any vibrations in flesh analogous to the disturbances of the medium of which we heard when discussing the three senses sight, hearing, smell.

b 17. ἡ γλῶττα. The tongue is clearly regarded as a special case of "the flesh."

b 18 ὄψιν...ἀκοὴν...19 ὄσφρησιν, here the organs of sight, hearing and smell respectively. See *note* on 417 a 3.

b 19. ὥσπερ ἐκείνων ἕκαστον. This redundant *ὥσπερ* clause reiterates, and so emphasises, the analogy already expressed by the clause beginning with *ὡς ὁ ἀήρ*. Something similar occurs 417 a 9—13 where a 13 *ὁμοίως* introduces a restatement of the clause a 9 *ἐπειδὴ κτέ.*: cf. 431 b 12 *τὰ δὲ ἐν ἀφαιρέσει λεγόμενα νοεῖ ὥσπερ*...15 *οὕτω τὰ μαθηματικά*, *Metaph.* 1002 b 5 *παραπλησίως δ' ἔχει*... (b 8) *ὁμοίως δὲ δῆλον ὅτι ἔχει.* Cf. also Plato, *Phaedo* 109 E, *Crito* 54 D, *Crat.* 433 A, cited by Riddell, *Digest of Platonic Idioms*, § 209. The sequence *ὡς...οὕτως... ὡς* is more common in poetry.

b 21. οὔτ' ἐκεῖ οὔτ' ἐνταῦθα, "neither in the case of sight, hearing and smell (*ἐκεῖ*), nor in the case of taste and touch (*ἐνταῦθα*)."

b 22. ᾗ καὶ δῆλον: so 426 b 15. The dative is causal, rather than modal, like our "whereby it is also clear," or *ᾗ καὶ μᾶλλον* in Thucydides, e.g. IV. 1, 3. Cf. *Pol.* 1272 a 3, *De Gen. et Corr.* I. 1, 314 b 26.

b 23. ὅτι ἐντός, int. *ἐστί*, is inside the body. The region of the heart is nowhere precisely indicated in *De A.* or *De Sensu* or *De Mem.*: it is sometimes mentioned, more often alluded to, in the physiological or biological treatises. See *De Iuv.* 3, 469 a 4 *ἡ δὲ καρδία κυριωτάτη*...a 10 *ἀλλὰ μὴν τό γε κύριον τῶν αἰσθήσεων ἐν ταύτῃ* [int. *τῇ καρδίᾳ*] *τοῖς ἐναίμοις πᾶσιν· ἐν τούτῳ γὰρ ἀναγκαῖον εἶναι τὸ πάντων τῶν αἰσθητηρίων κοινὸν αἰσθητήριον. δύο δὲ φανερῶς ἐνταῦθα συντεινούσας ὁρῶμεν, τήν τε γεῦσιν καὶ τὴν ἁφήν, ὥστε καὶ τὰς ἄλλας ἀναγκαῖον.* From this passage it would appear that the same is true for the other senses, viz. that the true seat of sensation is internal, and not, as some passages imply, in the external sense-organ. Cf. *De Iuv.* 3, 469 a 20 *διὰ τί δ' αἱ μὲν τῶν αἰσθήσεων φανερῶς συντείνουσι πρὸς τὴν καρδίαν, αἱ δ' εἰσὶν ἐν τῇ κεφαλῇ...τὸ αἴτιον τούτων*

ἐν ἑτέροις εἴρηται χωρίς. The transmission of corporeal *κινήσεις* A. supposed to take place along the blood-vessels, all of which terminate in the heart. **οὕτω γάρ**, i.e. on this view and on this view only, namely that the seat of touch is within, do we get a consistent account, applicable to the action of all the senses. It will then be true of all that what is placed upon the organ is not perceived, even if what is placed upon the flesh is perceived by touch. Cf. 419 a 12, 421 b 16.

b 25. **αἰσθάνεται**, int. *ὁ αἰσθανόμενος*, the percipient subject.

423 b 27—424 a 16. Objects of touch are the different qualities of body as such, hot and cold, dry and moist, the fundamental qualities which differentiate the four elements [§ 10]. And the sense-organ of touch, that is, the primary sense-organ, is potentially possessed of these qualities. Hence we do not perceive a quality (e.g. temperature) when it is uniform in degree with our own, but only when it is in excess or defect as compared with ourselves. The sense being a mean between extremes can judge sensible objects, which are extremes [§ 11]. The range of touch, as of the other senses, includes the special sensible itself and its opposite, in this case the tangible and intangible, the latter term including what is barely perceptible by touch, as air, and what is so violent as to destroy the sense [§ 12].

423 b 27. **ᾗ σῶμα**, int. *ἐστί.* The same thing is said from the opposite side, *De Gen. et Corr.* II., c. 2 *ad init.* We set out in search of *αἰσθητοῦ σώματος ἀρχάς*, i.e. *ἁπτοῦ σώματος* or *οὗ ἡ αἴσθησις ἁφή*, whence the conclusion (329 b 8) *φανερὸν ὅτι οὐ πᾶσαι αἱ ἐναντιώσεις σώματος εἴδη καὶ ἀρχὰς ποιοῦσιν, ἀλλὰ μόνον αἱ κατὰ τὴν ἁφήν.* There A. asks what are the qualities of body as such and replies the opposites which fall under touch. Here in *De A.* he has to enumerate the different qualities that fall under touch and says they are the properties of body as such.

b 28. **διορίζουσι.** For the manner in which the different combinations of these primary contraries, two and two, determine the four "simple bodies" (*ἁπλᾶ σώματα*), the so-called "elements" (*στοιχεῖα*), see *De Gen. et Corr.* II., cc. 2 and 3. In building up things, A. starts from matter regarded as pure potentiality. He then takes four primary qualities and puts them together in pairs: the hot with the dry constitutes Fire, the hot with the moist Air, the cold with the moist Water, the cold with the dry Earth.

b 30. **αὐτῶν**, i. q. *τῶν ἁπτῶν*, viz. *θερμὸν ψυχρόν, ξηρὸν ὑγρόν.* **τὸ ἁπτικόν**, in agreement with *τὸ αἰσθητήριον.* **καί**, explicative.

b 30 **ἡ καλουμένη ἁφή**...31 **αἴσθησις.** I accept the word *αἴσθησις* inserted by E T Wy and Simpl. *ἡ καλουμένη ἁφὴ αἴσθησις* = "the sense which is called touch," as in *Pol.* 1262 a 24 *ἡ ἐν Φαρσάλῳ κληθεῖσα Δικαία ἵππος* = "the mare called Dicaea." All four words are to be taken together, the construction being interrupted by hyperbaton of *ὑπάρχει.* It may be that A. speaks thus because he does not regard contact of the object with the flesh (which he is here considering) as truly touch. True touch is the action of the object (through the flesh) upon the internal organ. Cf., however, 420 b 28, 407 a 4, 429 a 22.

b 31. **πρώτῳ.** See *note* on 422 b 22. It is expressly said in 426 b 15 that flesh is not the real organ of sense as such, there called *ἔσχατον.* **τοιοῦτον**, i.e. "hot, cold, dry and moist," in fact possessing, but only potentially, the qualities actually possessed by tangible things.

424 a 1. **πάσχειν τι.** Cf. 416 b 33, 417 a 15. The word *τι* might be taken as in agreement with *πάσχειν* (see *note* on 410 a 25), but to make it the accusative governed by *πάσχειν* gives an equally satisfactory sense and is supported by the parallel account of *ὀσμᾶσθαι* 424 b 17. Cf. 419 a 18, 424 a 34, b 16, in

all of which τι is governed by πάσχειν. **ὥστε τὸ ποιοῦν...ἐνεργείᾳ.** This is very concise. The full construction would be τὸ ποιοῦν τὸ ἁπτικὸν τοιοῦτον ἐνεργείᾳ οἷον αὐτό [i. q. τὸ ἁπτόν, which is τὸ ποιοῦν] ἤδη ἐνεργείᾳ ἐστίν, where the predication of ποιεῖν is incomplete without ἐνεργείᾳ. The tangible object makes the organ in actuality such as the object itself is already in actuality.

a 2. τοιοῦτον ἐκεῖνο ποιεῖ δυνάμει ὄν. As I understand this, τοιοῦτον goes with δυνάμει ὂν and not with the preceding οἷον αὐτό. In the formula we generally have δυνάμει τοιοῦτον, though nowhere else at such length. In either case τοιοῦτον is strangely misplaced. ποιεῖ is used as a verb of complete predication = "acts upon," correlative to πάσχειν, "to be acted upon": cf. 407 b 18 τὸ μὲν ποιεῖ τὸ δὲ πάσχει, 423 b 14, 424 b 10 οὐδὲν ποιεῖ τὰ σώματα, 429 b 26, 430 a 19. This use of ποιεῖ is very common in other treatises, e.g. *Meteor.* IV. 8, 385 a 2, 4 ποιεῖν τι δύνασθαι τὴν αἴσθησιν (the subject of the verb there including θερμόν, ψυχρόν), IV. 12, 390 a 18 πάντα γὰρ δυνάμει τινί ἐστιν ἢ τοῦ ποιεῖν ἢ τοῦ πάσχειν. **ἐκεῖνο** is of course the sense-organ. Others prefer to make τὸ ποιοῦν the agent, taking it in the same manner as I take ποιεῖ and joining τοιοῦτον with the preceding οἷον αὐτό. In that case it would be better to remove the comma after ἐνεργείᾳ. So Trend.: iungas hoc modo: ὥστε τὸ ποιοῦν ποιεῖ ἐκεῖνο δυνάμει ὂν τοιοῦτον οἷον αὐτὸ ἐνεργείᾳ. Relativa effecerunt, ut quae verba effectum indicant, non, qui quidem iustus est sententiarum ordo, sequantur sed praeposita sint. If Trend. were right, we might compare 418 a 23 οὐδὲν πάσχει ᾗ τοιοῦτον ὑπὸ τοῦ αἰσθητοῦ. How cumbrous this is may be seen from Professor Beare's version (p. 195) "the (agent or) object so acts upon the organ (the patient) as to impart to the latter *actually* the quality which the object itself actually has, but which the organ before had only potentially": whereas, if we conceive τὸ ποιοῦν [τοιοῦτον] οἷον αὐτὸ ἐνεργείᾳ to be merely a periphrasis for the agent, describing it from the final result of its agency, and so get rid of that part of the formula, room is left for special insistence on the potential likeness between agent and patient. The agent which assimilates the patient to itself finds the way prepared, for it acts upon something potentially like itself. Hammond neatly renders "whatever makes another thing to be in reality like itself does so by virtue of that thing's having this nature in potentiality": but he does not appear to take ἐνεργείᾳ with αὐτό (ἐστι).

a 2. διό. The change from δυνάμει τοιοῦτον to ἐνεργείᾳ τοιοῦτον, which takes place in the act of sensation, explains why, when the object which we touch is as hot or cold, as hard or soft, as the organ of touch, we have no perception of hot or cold, hard or soft, from it. If the temperature or resistance of ἁπτικὸν and ἁπτὸν were equal, no change would take place. It will be observed that the organ, whether it be internal or the flesh, has its own temperature and its own degree of hardness or softness when it is not functioning as an organ of touch. *Quâ* organ, it may be δυνάμει τοιοῦτον, but it is also in actuality of this or that temperature, this or that hardness or softness. If we touch something and pronounce it hard, the hand itself must be soft as compared with what it touches: and similarly if with the same hand we touch something else and pronounce it soft, the hand must be hard compared with what it now touches. The same hand, then, must be soft to the one thing, hard to the other, and we perceive in the first case the excess and in the second case the defect of hardness in the object as compared with the hand: the hand itself, then, in point of resistance, lies between the two. Cf. *Meteor.* IV. 4, 382 a 17 ἐπεὶ δὲ πρὸς τὴν αἴσθησιν πάντα κρίνομεν τὰ αἰσθητά, δῆλον ὅτι καὶ τὸ σκληρὸν καὶ τὸ μαλακὸν ἁπλῶς πρὸς τὴν ἁφὴν ὡρίκαμεν, ὡς μεσότητι χρώμενοι τῇ ἁφῇ· διὸ τὸ μὲν ὑπερβάλλον αὐτῆς σκληρόν, τὸ δ' ἐλλεῖπον μαλακὸν εἶναί φαμεν.

a 4. ὡς τῆς αἰσθήσεως. On ὡς with an absolute case, "a fact which implies," see *note* on 411 b 26. Cf. 426 b 3. Whether the inference is confined to touch or includes sense in general was not clear to Philop. (435, 25) *αἴσθησιν νῦν τὸ αἰσθητήριον λέγει, μεσότητα δ' εἶπε τὴν αἴσθησιν ἤτοι τὴν ἁφὴν (περὶ ταύτης γὰρ νῦν ὁ λόγος) ἢ καὶ πᾶσαν.* It is unimportant, for the general conclusion must be reached by induction from the particular senses and, as we see 424 a 7—9, A. regards the induction as complete for the other senses.

a 4 μεσότητος...5 ἐναντιώσεως. Here we must anticipate the general conclusion to which the examination of each special sense has brought us nearer. A. says, 426 b 8—12, that each special sense has its own province or *γένος*, bounded by a pair of opposites. All the sensible objects which come under its ken exhibit some quality (colour, odour, temperature, humidity, resistance), but in infinitely varying degrees. To perceive colour is to perceive white or black, or any of the various shades lying between the two. To perceive temperature is to be made sensible of what is extremely hot or extremely cold or is at any degree of heat or cold intermediate. Thus to the single province of each special sense corresponds a single contrariety, a sort of scale ranging from opposite to opposite and including every possible difference. See *note* on 422 b 23 **μιᾶς ἐναντιώσεως.** The sense, we know, is potentially any of its special sensibles and is assigned an intermediate position in the scale from opposite to opposite formed by them. This is obvious in regard to temperature. Our normal temperature is a mean between the opposite extremes, that is, the highest and lowest degrees of temperature perceived by us. The sense-organ has an intermediate place in the scale. It is constituted by different elements and hence is itself called their combining proportion, or the ratio of their admixture: cf. 426 b 3, 7 *λόγος* [int. *τῆς μείξεως*]. The term *μεσότης* recurs 431 a 11, 19, 435 a 21. It is implied that the organ, being neutral or indifferent, is capable of receiving the opposite determinations.

a 5. διὰ τοῦτο. Because it is a mean and a mean is the best empirical standard. **κρίνει.** See 411 a 4 and *note*. The discrimination, which is implied in all perception, has not been hitherto specially emphasised in the treatment of the several senses, but from 426 b 10 it is clear that it belongs to every act of sensation. To perceive an object by sense, to pronounce a judgment upon it, to receive its form without the matter, are various modes of describing what is substantially one and the same act. Cf. *κρίνει* 418 a 14, 422 a 21.

a 6. πρὸς ἑκάτερον αὐτῶν, relatively to each of the extremes in turn. The subject to **γίνεται** is *τὸ μέσον*. Cf. *Eth. Nic.* 1108 b 15 *ὥσπερ γὰρ τὸ ἴσον πρὸς μὲν τὸ ἔλαττον μεῖζον πρὸς δὲ τὸ μεῖζον ἔλαττον, οὕτως αἱ μέσαι ἕξεις πρὸς μὲν τὰς ἐλλείψεις ὑπερβάλλουσι πρὸς δὲ τὰς ὑπερβολὰς ἐλλείπουσιν ἔν τε τοῖς πάθεσι καὶ ταῖς πράξεσιν. ὁ γὰρ ἀνδρεῖος πρὸς μὲν τὸν δειλὸν θρασὺς φαίνεται, πρὸς δὲ τὸν θρασὺν δειλός.* Cf. *Phys.* VIII. 8, 262 a 19 (where A. is speaking of points on a line) *τριῶν γὰρ ὄντων ἀρχῆς μέσου τελευτῆς, τὸ μέσον πρὸς ἑκάτερον ἄμφω ἐστί*: cf. 262 a 21—26.

a 7. ὥσπερ τὸ μέλλον. Cf. *supra* 417 a 6 *δῆλον οὖν ὅτι τὸ αἰσθητικὸν οὐκ ἔστιν ἐνεργείᾳ ἀλλὰ δυνάμει μόνον κτέ.*

a 10. καὶ ἀοράτου. Cf. 418 b 26—29, 422 a 20 sqq.

a 11. ἦν, "is, as we saw." Cf. 419 a 9, 424 a 31.

a 11. πως. Cf. 422 a 22 *ἄλλον δὲ τρόπον τοῦ σκότους.* **ἀντικειμένων,** int. *ἦσαν*. This was shown for smelling 421 b 5 sq., for tasting 422 a 29.

a 12. ἄναπτον. The intangible may be that which has too small a differential quality to be perceived by touch, or it may have the quality in large excess, so that it is more than the organ can take in without suffering.

a 13. διαφορὰν, "qualitative difference," almost the same as quality. Air resembles ourselves, being not very hot or very cold, and the small difference of temperature causes it to have a very small differential quality. Cf. Them. 77, 24 H., 141, 28 Sp. *ἄναπτον δὲ τό τε μικρὰν παντάπασιν ἔχον καὶ ἀμυδρὰν τῶν ἁπτῶν διαφοράν*, Philop. 436, 24 *τὰ ἠρέμα ἁπτά· τοιαῦτα δ' ἂν εἴη τὰ μὴ πολὺ ἀφεστηκότα τῶν αἰσθητηρίων κατὰ τὰς ἁπτὰς ποιότητας.* So taken, *διαφορὰν τῶν ἁπτῶν* practically = *διαφορὰν ἁπτήν*. It is possible, however, to take *τῶν ἁπτῶν* as a partitive genitive depending upon *τὸ ἔχον*, "that of tangibles which has an extremely slight difference." Or, if *διαφορὰ* = "distinctive character," "that of tangibles which has the [tangible] quality in an extremely slight degree." So Professor Beare, p. 196, with *note* 2. The parallel passages 421 b 7 sq., 422 a 30 lead us to expect the accusative after *ἔχον* to be that which in touch corresponds to *ὀσμὴ* and *χυμός*: and, as this has no name (cf. 422 b 32 sq.), it may very well be replaced by *διαφορὰν τῶν ἁπτῶν*.

Madvig, *Adversaria* I. 472, proposed *τῶν ἁπτόντων* for *τῶν ἁπτῶν* and would then translate *διαφορὰν* "difference," not "quality." The clause would then run "*ἄναπτον* includes tangibles very slightly different (in temperature etc.) from those touching," i.e. from the subject. Thus Madvig makes A. insert a clause explaining why things with small differential qualities are termed intangible.

a 14. πέπονθεν. Cf. 430 a 13. **τῶν ἁπτῶν αἱ ὑπερβολαί**. Here *τῶν ἁπτῶν* should naturally bear the same sense as in the preceding line, which makes against Madvig's proposed change. In 424 a 4 *τῶν ὑπερβολῶν* means no more than the excess of the quality over that of the sense-organ which is necessary to sense-perception at all, if it consists in the transition from *δύναμις* to *ἐνέργεια*. Here it means extravagant excess of quality, deranging the organ as such. Cf. 424 a 29, 426 a 30, b 7, 435 b 8, 15, 18.

a 15. φθαρτικά. Violent excesses of the quality in the object derange and destroy the sense-organ in its attempt to apprehend them. Cf. 422 a 31, 33, 421 b 23—25.

CHAPTER XII.

424 a 17—28. Sense in general must be understood to be the recipient of various sensible forms apart from the matter. As wax receives the impression of the signet-ring without the material, iron, gold, or bronze, that is, takes the imprint of the material, but not *quâ* material, so sense is affected by objects possessing colour, flavour, or sound, not as so many concrete objects, but as coloured, flavoured, or sonorous, that is, in respect of their notion or character [§ 1]. As soon as any part of the organism exhibits this sort of capacity, we have a sense-organ. Thus the organ and the faculty are identical, though in aspect different: the organ which perceives being something extended, while sensitivity, or sense in the abstract, instead of being something extended, is, so to say, a character or capacity of the organ [§ 2].

424 a 17. καθόλου. The five senses have been severally treated in chapters 7 to 11. It remains to consider what statements we can make concerning all the senses collectively, that is concerning sense as a whole (412 b 24). See *note* on 410 b 26. **ἡ μὲν αἴσθησις.** What precisely is "sense," which we here proceed to define? Is it the organ or the faculty? The answer, given in 424 a 24 sq., is that it is both: or rather organ and faculty are one and the same under different aspects. And so we must interpret the useful, if somewhat less

exact, summary 426 b 8 ἑκάστη μὲν οὖν αἴσθησις τοῦ ὑποκειμένου αἰσθητοῦ ἐστίν, ὑπάρχουσα ἐν τῷ αἰσθητηρίῳ ᾗ **αἰσθητήριον**, καὶ κρίνει τὰς τοῦ ὑποκειμένου αἰσθητοῦ διαφοράς, οἷον λευκὸν μὲν καὶ μέλαν ὄψις, γλυκὺ δὲ καὶ πικρὸν γεῦσις. ὁμοίως δ' ἔχει τοῦτο καὶ ἐπὶ τῶν ἄλλων.

a 18. δεκτικὸν. Cf. 418 b 26 ἔστι δὲ χρώματος μὲν δεκτικὸν τὸ ἄχρουν, ψόφου δὲ τὸ ἄψοφον. Sense is "receptive" as being "passive" or "acted upon" and also as being potentially what the object is actually. The same statement is made of τὸ αἰσθητήριον 425 b 23, 435 a 22. Cf. also 414 a 8—10, 429 a 15. **τῶν αἰσθητῶν εἰδῶν.** Sensible objects have form as well as matter. Sense, as we shall see, is form, and, as such, it apprehends form. The "sensible forms" of the text are therefore the forms of sensible things, the qualities in them which constitute them what they are, the red of the red thing, the sound of the resonant thing, the flavour of the flavoured thing. Each of these qualities, taken in itself, is a universal, or καθόλου, in A.'s language τοιόνδε, not τόδε τι, *Anal. Post.* I. 31, 87 b 28 sq.

a 19. τοῦ δακτυλίου depends grammatically upon a 20 τὸ σημεῖον. It is placed thus early and close to ὁ κηρὸς in order to correspond to τῶν αἰσθητῶν εἰδῶν in relation to τὸ δεκτικόν.

a 21. οὐχ ᾗ χρυσὸς, int. ὁ δακτύλιός ἐστι, "not in so far as the ring is gold...." Note that this phrase replaces the ἄνευ...τοῦ χρυσοῦ of the previous clause. With this use of the simile compare *De Mem.* 1, 450 a 30—b 3 ἡ γὰρ γιγνομένη κίνησις ἐνσημαίνεται οἷον τύπον τινὰ τοῦ αἰσθήματος, καθάπερ οἱ σφραγιζόμενοι τοῖς δακτυλίοις κτέ., where it is applied not to the original "motion" of sensation but to the subsequent retention or survival of that motion in φαντασία. Cf. *De A.* 428 b 10 sqq.

a 22. ἑκάστου. The genitive must express the special sensible in each case: 426 b 8 τοῦ ὑποκειμένου αἰσθητοῦ, 428 b 18 ἡ αἴσθησις τῶν μὲν ἰδίων. Thus ἑκάστου = whatever it be that sense perceives, whether colour or sound or flavour. Cf. 425 b 24, 430 b 6, also 426 b 16 αὐτοῦ = τοῦ αἰσθητοῦ. Similarly 418 a 17 "such and such objects are called special sensibles of the sense, whatever it be, which perceives them."

a 23. ᾗ ἕκαστον ἐκείνων λέγεται. This means that the object acts upon sense not in so far as it is a concrete object, but in so far as it is coloured or flavoured, or sonorous: e.g. when we perceive the white rose by sight, it is not the rose *quâ* rose, but the rose *quâ* white, which acts upon the sight. The ring impresses the wax, not *quâ* metal, but in so far as it has a particular shape. τὸ ἔχον χρῶμα is some particular object, τόδε τι, yet it is not as τόδε τι or τοῦτο that it acts upon sense, but solely as τοιονδί, coloured. Hence ἐκείνων refers to 424 a 22 τοῦ ἔχοντος...23 ψόφον, ἐκείνων being rightly used for "the other things" or the substances possessed of sensible qualities as distinguished from the sensible qualities themselves to which sense is related: cf. a 22 ἡ αἴσθησις ἑκάστου. We may ask, is ἕκαστον subject or predicate? If it is subject, as seems probable, it must be understood again as predicate, for τοιονδὶ is predicate (a 24) and ἕκαστον ἐκείνων must correspond to τοιονδί; or, which comes to the same thing, λέγεται must be taken = "is so called," is called what it is, viz. some individual concrete thing. Cf. 412 a 8, 429 b 6, *Metaph.* 1018 b 3 καὶ τὰ ἐναντία ἕτερα τῷ εἴδει ἀλλήλων ἢ πάντα ἢ τὰ λεγόμενα [int. ἐναντία] πρώτως, called contraries in the primary sense of the term.

a 24. τοιονδί. This serves as a general term for "coloured, flavoured, sonorous," or for epithets denoting particular colours, flavours or sounds, "white etc., sweet etc., shrill etc." A. commonly uses τοιονδὶ as opposed to τόδε τι for the category of quality as opposed to the category of substance.

καί, explanatory. **κατὰ τὸν λόγον**, "in virtue of its form," "on the formal side." With this adverbial use of the phrase cf. 412 b 10 sq., where it is an attribute of *οὐσία*. The terms λόγος and εἶδος are equivalent (see first *note* on 403 b 2), but the former gives prominence to the notion or character, that which the definition seeks to express in words. The whole sentence merely expands a 18 sq. "receptive of the form without the matter." As the soul itself is the formal essence of the animal (*οὐσία ἡ κατὰ τὸν λόγον*), i.e. the form without the matter, so the sensible acts on sense in virtue of its form alone to the exclusion of its matter. **πρῶτον**. For this expression cf. 422 b 22, *note*. Here, however, it is decidedly preferable to understand *πρῶτον* in the same way, e.g., as 412 a 27, b 5 *ἐντελέχεια ἡ πρώτη*. We have gone through the several senses and found various parts of the body employed as sense-organs. The common characteristic of them all is that in them the sensory faculty resides. Thus seeing resides in the pupil of the eye 412 b 20 sq., and so on. This is a provisional view, which will require to be modified when we consider *sensus communis*. There seems no ground for introducing at this stage *τὸ κοινὸν αἰσθητήριον*, "the organ of this *sensus communis*," that which is at the back of the several senses (for which see 426 b 12—427 a 16), as is done by some commentators, e.g. M. Rodier: "Le sensorium premier est celui dans lequel réside cette faculté (la sensibilité en général)."

a 25. ἡ τοιαύτη δύναμις. The power, or capacity, to apprehend the form without the matter, as above explained. **ἔστι μὲν οὖν**, int. *τὸ αἰσθητήριον καὶ ἡ δύναμις*. Thus Them. 78, 14 H., 143, 8 sqq. Sp. *καὶ τῷ μὲν ὑποκειμένῳ ταὐτὸν ἥ τε αἴσθησις καὶ τὸ αἰσθητήριον...τὸ δὲ εἶναι ἕτερον τοῦ τε ὀργάνου καὶ τῆς δυνάμεως*. **τὸ δ' εἶναι ἕτερον**. A. wants to say that the sense-faculty and the sense-organ are inseparable: you cannot have one without the other. Without the faculty the dead organ is a mere *ὁμώνυμον* or *ὁμωνύμως λεγόμενον*, so called by courtesy (cf. 412 b 14, 21, *Metaph.* 1035 b 14—18, 22—25, 1036 b 28—32, *Pol.* 1253 a 21). But they are essentially different; the one is an organ, the other a faculty, the one has magnitude, the other is unextended; the sense is a *δύναμις* connected with the organ, *ὑπάρχουσα ἐν τῷ αἰσθητηρίῳ ᾗ αἰσθητήριον*, 426 b 9. The organ and its faculty are one and the same, but we can separate the two in thought. If we look at the organ (*τὸ αἰσθανόμενον*) as a concrete thing and take account of its matter, it is an extended magnitude: if we abstract from the matter and attend only to the form, it is a power or faculty residing in this extended magnitude, but itself unextended and immaterial. That which each of these two aspects *is* can be expressed by *τὸ εἶναι*: the aspects are different; the act of thinking is different for each of them; as the notion whereby we think each aspect is different, so the definition which expresses this notion in words is different. Sometimes A. will prefer to say that two things are *ἕτερα* (or *οὐ ταὐτὸν*) *τῷ εἶναι, τῇ νοήσει, τῷ λόγῳ*: sometimes, as here, he says that in the two cases *τὸ εἶναι ἕτερόν ἐστιν*. The aspect or *εἶναι* of the one is not the aspect or the *εἶναι* of the other. Organ and faculty, like uphill and downhill, are logically distinct. Their mutual implication appears in such phrases as "poor sight," "a good ear," "a delicate touch."

a 26. ἄν τι εἴη. The mode of expression with *ἄν* and the optative implies no sort of doubt in this conclusion, the suppressed protasis being "if the foregoing is true." In fact the potential optative here approximates in meaning to the indicative (Goodwin, *M. and T.* § 238; cf. Gildersleeve 442) and the ancient commentators paraphrase by *ἐστί*: Them. (78, 17 H., 143, 12 Sp.) *τὸ μὲν γὰρ ὄργανον μέγεθός τι καὶ σῶμά ἐστιν*: Simpl. (167, 31) *τὸ μὲν γὰρ ἀμέριστον, ἡ δὲ ἀνειλιγμένη ἐστὶν οὐσία*. Cf. Philop. 438, 30 sqq. See *notes* on 403 a 9,

421 b 20. **τὸ αἰσθανόμενον.** What is said is equally true of the whole percipient organism and of the particular organ. **τό γε αἰσθητικῷ εἶναι.** Cf. 408 a 25, *note*, 413 b 29 sq., 429 b 10 sqq.

a 28. **ἐκείνου**, int. *τοῦ αἰσθανομένου.* Receptivity in the abstract is an immaterial form. Such a form is properly called a *λόγος* because it alone can be rationally defined or (in other words) is the content of the definition, cf. 424 a 24 *κατὰ τὸν λόγον.* Again, it is a *δύναμις* because it represents what a thing is good for, or is able to effect or be. Thus musical or medical skill "determines" the musician or physician, making him what he is: *Pol.* 1253 a 23 *πάντα δὲ τῷ ἔργῳ ὥρισται καὶ τῇ δυνάμει.* For the combination of *λόγος* and *δύναμις*, the character and capacity, cf. *De Gen. An.* II. 1, 731 b 19 *τίς ἡ δύναμις καὶ ὁ λόγος τῆς οὐσίας* [int. *τοῦ θήλεος καὶ τοῦ ἄρρενος*], and for *δύναμις* as equivalent to form cf. *Pol.* 1323 b 33 *ἀνδρία δὲ πόλεως καὶ δικαιοσύνη καὶ φρόνησις τὴν αὐτὴν ἔχει δύναμιν καὶ μορφήν*, and *De Gen. et Corr.* I. 5, 322 a 28 *τοῦτο δὲ τὸ εἶδος ἄνευ ὕλης, οἷον ἄϋλος δύναμίς τις ἐν ὕλῃ ἐστίν.*

424 a 28—b 18. If the sense-organ is too violently affected from without, its constituent form, that is to say, its capacity to perceive, is destroyed. The reason for this will be evident from the foregoing [§ 3]. Again, the absence of sensibility in plants, in spite of their having a vital principle and being acted upon by tangible objects, is due to the fact that they have not in them any capacity of receiving the forms only, apart from the matter, of sensibles [§ 4]. Further, a question arises: In the absence of perceptive faculty, can the sensible quality, e.g. odour, produce any effect short of perception? Apparently not: the effect, e.g., of odour is either smelling or nothing at all. Besides, it is the medium or vehicle of the sensible quality, and not the sensible quality itself, which directly affects bodies [§ 5]. But the objects of touch and taste do produce effects apart from perception. Why not, then, it may be urged, the objects of the other senses? What, e.g., is smelling except being acted upon by odour? To this we reply: Smelling involves sentience; the air, acted upon by odour, becomes not sentient, but sensible [§ 6].

424 a 28 φανερὸν δ'...29 τὰ αἰσθητήρια. This well-known maxim became stereotyped amongst the scholastics as *excellens sensibile corrumpit sensum*, or *sensibilium excellentia corrumpit sensum.* Cf. 422 a 21 *ἔτι τοῦ λίαν λαμπροῦ* (*καὶ γὰρ τοῦτο ἀόρατον*). Dante is fond of bringing in this fact, *Purgatorio* 8, 36 Ma nelle facce l' occhio si smarria, | Come virtù, ch' a troppo si confonda, where virtù = *ἀρετή* of the faculty: A. says the *λόγος* or *δύναμις* is spoiled, and the organ when it can no longer function has to all intents and purposes ceased to be an organ. See *note* on 422 a 31, and cf. *supra* 421 b 23, 422 a 29—33, 424 a 14, 15, also 426 a 30—b 7, 429 a 29—b 3.

a 30. **ἡ κίνησις.** Clearly the corporeal change in the corporeal organ. It is attended either by no perception at all, or by a painful effort and failure to perceive accurately. Cf. 426 b 7 *λυπεῖ ἢ φθείρει*, 429 a 31—b 3. **λύεται ὁ λόγος.** We are tempted to understand by *λόγος* the quantitative proportion in which materials are compounded in the sense-organ, the *κρᾶσις* or *ἁρμονία τῶν μειχθέντων* of 407 b 32 sq., see *note* on 424 a 4, **μεσότητος.** But it seems probable that even here the word bears the same meaning as in the previous section, namely "character" or "form," which the quantitative proportion may, however, be regarded as conditioning.

a 31. **τοῦτο δ'**, int. *ὁ λόγος, τὸ αἰσθητικῷ εἶναι*, a 27, 28 *supra.* **ἦν.** Cf. 424 a 11. **ὥσπερ καὶ ἡ συμφωνία καὶ ὁ τόνος**, int. *λύονται*: *συμφωνία* is the blending of two or more sounds or notes, which may form either a chord or an unison in octaves. Cf. *Metaph.* 1043 a 10 *συμφωνία δὲ ὀξέος καὶ βαρέος μῖξις*

τοιαδί. But the notes which are capable of being so blended into one are determined by numerical proportion, λόγος ἀριθμῶν, and ultimately by number itself: *Anal. Post.* II. 2, 90 a 18 sqq., *Phys.* II. 3, 195 a 29 sqq., *De Sensu* 3 439 b 31 sq. (ἐν ἀριθμοῖς εὐλογίστοις). Thus the ratio of the double, 2 : 1, determines the octave, that of the ἡμιόλιον, 3 : 2, determines the fifth and that of ἐπίτριτον, 4 : 3, determines the fourth. Jan has collected the relevant passages of Aristotle in *Musici Scriptores*, De Consonantia, pp. 18—22; cf. *ib.* pp. 84—111 from *Problems* XIX.

a 32. ὁ τόνος, "the tension" (of the string) and so the pitch of the note produced by it. Cf. *Physiogn.* 2, 807 a 16 τόν τε τόνον ἀνίησι καὶ βαρὺ φθέγγεται. The effect of striking the lyre too violently is that the strings get out of tune and what should be a harmonious chord becomes a discord. The two strings, e.g., that should emit a perfect fifth produce notes which refuse to blend in concord. **καὶ διὰ τί ποτε...33 οὐκ αἰσθάνεται.** Cf. 411 b 28, 415 a 1 sqq.

a 33. μόριον ψυχικόν, namely the vegetative or nutritive principle, soul or faculty. Cf. 414 a 32 ὑπάρχει δὲ τοῖς μὲν φυτοῖς τὸ θρεπτικὸν μόνον. Cf. also 411 b 27 sqq., 434 a 22—26.

a 34. πάσχοντά τι: ψιλὰ τὰ εἴδη δέχεσθαι, Them. 78, 32 H., 144, 4 Sp. We have the clearest evidence that tangibles, if not other sensible objects, act upon plants. The question whether the plant can see or hear is not so likely to arise. Plants are acted upon, or affected, but not (like animals) in such a manner as to take the form of objects without the matter.

424 b 1. τὸ μὴ ἔχειν μεσότητα. Heat is in no part of the plant so tempered as to be in respect of temperature and humidity, like the flesh in animals, intermediate between any two degrees of these qualities presented by tangible objects. The simple organs of plants are incapable of discriminating the differences of the sensible qualities in objects. See 412 b 1 sq., 411 b 23. This illustrates the importance of μέσον or μεσότης to A. Plato's term μέτριον in *Philebus* and *Politicus* is more appropriate. See Prof. J. A. Stewart on *Eth. Nic.* 1106 b 8—16, *Notes on Nic. Ethics* I. p. 196 sq.

b 3. πάσχειν μετὰ τῆς ὕλης, i.e. "at the same time as they receive the form of anything, they receive the matter likewise" (Wallace). As Them. says (78, 36 H., 144, 10 Sp.) πάσχει οὖν συνεισιούσης τῆς ὕλης τῆς τοῦ ποιοῦντος. They are affected by tangibles in the same way as they absorb nutriment. The plants cannot be warmed or cooled unless material vapour or moisture enters them, let us say, by the pores, in the very way in which Empedocles and Democritus supposed sensation to take place in animals. But such an explanation of sentience or sensation A. has left far behind, as modern botany has superseded his own crude view of the physiology of plants. Philop., while mentioning the view taken above, inclines to a different view which interprets μετὰ τῆς ὕλης by κατὰ τὴν ἰδίαν ὕλην πάσχειν τρεπομένην καὶ μεταβάλλουσαν, in the plant's own matter, ὑλικῶς καὶ σωματικῶς. The plant's own matter then is modified by contact with heat and cold, the sensible qualities get so far and penetrate no further: (440, 23) ἡ γὰρ ὑποκειμένη αὐτοῖς ὕλη ὑπὸ τῶν αἰσθητῶν πάσχουσα ἐν ἑαυτῇ δέχεται τὰ πάθη τῶν αἰσθητῶν, ὕλη αὐτῶν γινομένη καὶ ὡς ὕλη αὐτὰ δεχομένη εἰς ἑαυτήν, ὡσεὶ καὶ ἄψυχος ἦν. But we cannot overlook the marked contrast to 424 a 18, ἄνευ τῆς ὕλης, nor does anything A. says justify us in assimilating what takes place in plants to the case where τὸ πάσχον, as well as τὸ ποιοῦν, is lifeless.

b 3. ἀπορήσειε δ' ἄν. The gist of the following discussion comes out more clearly in the paraphrase of Them. (79, 13 sqq. H., 145, 1 sqq. Sp.) than in the text of A. itself. The question seems to be suggested by the case of plants.

Granted that plants do not smell and do not see, are they, then, wholly uninfluenced by odour or by colour? The influence of light on the growth of plants is notorious. Does a noxious smell really do you any harm? A.'s contention is that the smell does you no harm. There may be something else noxious. The smell is a sort of danger signal. This corrects the too brief and summary statement of 421 b 23, which, however, applied to animals only (cf. 424 b 8 *τῶν δυνατῶν*).

b 6. εἴ τι ποιεῖ. Whatever effect odour produces consists in smelling and in nothing else. In the *εἰ* clause, the verb *ποιεῖ* has its general signification (*si quid agit*), in the apodosis its special signification (*efficit*). See *note* on 424 a 2 **τοιοῦτον.** One of the conditions for the mutual interaction of bodies, *ποιεῖν τι* and *πάσχειν τι*, is that they should be in contact, either directly or through a medium. Cf. 424 b 12. **τὴν ὄσφρησιν ἡ ὀσμὴ ποιεῖ.** The same argument is used 421 b 21—23.

b 8. ὁ δ' αὐτὸς...τῶν ἄλλων. This sentence is parenthetic. **οὐδὲ τῶν δυνατῶν**, int. *αἰσθάνεσθαι.* From the particular sense of smell A. has passed to the case of sensation generally. Anything capable of sensation cannot be acted upon by a sensible object unless it possesses the particular sense which that object can stimulate. An animal with no other sense than that of touch cannot see, hear or smell: colours, sounds and odours fail to act upon it.

b 9. καὶ οὕτως, i.e. by the following argument.

b 11. ἐν οἷς ἐστίν. The relative clause is used as in 408 a 32, b 23 and implies *ἐκεῖνα ἐν οἷς τὸ φῶς καὶ σκότος καὶ ὁ ψόφος καὶ ἡ ὀσμὴ εἰσιν*, "the things which contain light, dark, sound or smell." Cf. *ἔχει ψόφον*, 419 b 6 sq.: sound and smell are attributes of bodies, and so is *τὸ διαφανές* (418 b 6 sq.), which is actually light, when it is not actually darkness. Cf. Philop. 442, 20 *οὐχ ὑπὸ τῆς βροντῆς, ᾗ ἀκουστόν, πάσχει τὰ ῥηγνύμενα ὑπ' αὐτῆς σώματα, ἀλλ' ὑπὸ τοῦ ἀέρος τοῦ ψοφοῦντος κινουμένου βιαίως πλησσόμενα διίσταται...οὐχ ὑπὸ τοῦ ψόφου, ᾗ ψόφος ἐστὶ καὶ ἀκουστός.* The difficulty arises from a failure to distinguish between the object of the sense and the thing in which it resides, between the thing itself and its visible (or audible or odorous) quality. Simpl. would seem to have taken *φῶς* as equivalent to colour: (170, 16) *ὡς εἰ τὸ κεχρωσμένον...εἰς τὸ κάτω συνωθοίη, οὐ κατὰ τὸ χρῶμα δηλαδή, ἀλλὰ κατὰ τὴν βαρύτητα.* Cf. 435 b 7—12.

b 12. ἀλλά. A. foresees an objection to this effect: "If tangibles admittedly act upon bodies, how about the objects of the other senses?" He answers: "If we take the same view of these other sensibles, we shall confuse 'having a smell' with 'having a sense of smell.'" The passage is not very clear, but A. insists upon making the theory apply uniformly to all the special sensibles alike. I conceive the objection introduced at b 12 *ἀλλὰ* to be developed as far as b 14 *κἀκεῖνα ἐμποιεῖ* and A.'s first answer to extend from b 14 *ἢ οὐ πᾶν σῶμα* to b 16 *παθών τι.* He has then admitted *πάσχειν τι* and asks whether this does not carry with it *αἰσθάνεσθαι*, while the concluding sentence b 17 *ἢ τὸ μὲν ὀσμᾶσθαι κτέ.* finally disposes of the objection.

b 12. οἱ χυμοί. The effects of brine (salt water) or of acid upon vegetables and many minerals are instances. But, as Them. points out, the effect in these cases is due not to the "taste" of these juices (*χυμοί*)—acids, alkalis or salts—but to their intrinsic qualities (79, 19 sq. H., 145, 11 sq. Sp.). **εἰ γὰρ μή.** How can the palpable facts of change and modification in inanimate things be explained except by assuming that these inanimate objects are acted upon by other tangible things?

b 14. ἆρ' οὖν. "Shall we then say that the objects of the other senses produce modification in things?" It seems at first sight doubtful whether this

expresses A.'s own view. **κἀκεῖνα,** i.e. the objects of the other three senses also, things visible, things resonant and things odorous. **ἢ οὐ κτέ.** We should naturally expect a clause commencing with ἢ to introduce the solution provided by the author. A. may be supposed to put his reply in the form of a question: "Will odour and sound, therefore, also produce modification in inanimate things? or is it the fact that only some things can be acted upon by odour and sound, while others cannot?"

b 15. καὶ τὰ πάσχοντα ἀόριστα, καὶ οὐ μένει. "And the bodies which are susceptible are indeterminate and shifting and do not permanently remain what in quality they are made by the odour, sound etc." Cf. the Heraclitean dictum *πάντα ῥεῖ καὶ οὐδὲν μένει.* **οἷον ἀήρ· ὄζει γάρ.** The *γὰρ* explains why air is an instance. It "has scent"—is perfumed—from having been (just) acted upon.

b 16. τί οὖν. What, then, it may be said, is "smelling" beyond just this being acted upon? How, that is, does smelling differ from being affected, or acted upon, by odours?

b 17. πάσχειν τι. Here *τι* must be accusative, following so closely upon *παθὼν τι*, b 16. Cf. *notes* on 410 a 25, 424 a 1.

b 17. ἢ introduces A.'s final solution. The difference is that smelling involves perception (literally "is also perception"), whereas air, after being acted upon, does not perceive, but on the contrary is itself actually perceived. Cf. 421 b 21 *εἴπερ τῆς ὀσμῆς αἰσθάνεται.*

b 18. ταχέως. The suggestion seems to be that, if odour or sound, acting on the air, quickly makes it odorous or sonorous, it will as rapidly lose these acquired properties. They "quickly come and quickly go": cf. *supra* b 15 *οὐ μένει.* | In *De Sensu*, c. 6, odour and sound, the objects of smell and hearing, are said to be propagated gradually and to travel through the medium, reaching one percipient who is nearer sooner than one who is distant. **αἰσθητὸς γίνεται.** The net result, then, of the discussion, 424 b 3 sqq., is to make it very clear that, while we may say *αἰσθάνεσθαι* is *πάσχειν τι*, it is not invariably true that *πάσχειν τι* is *αἰσθάνεσθαι.* Air and water are the two great instances of *πάσχοντα* which are not *αἰσθανόμενα.*

BOOK III. CHAPTER I.

This chapter is closely connected with the preceding. In fact, it would have been better to begin Book III. at c. 3, or even, as Zabarella appears to have done, at c. 4.

424 b 22—425 a 13. The five senses discussed in the previous book are all that there are. This may be proved as follows: [premising that sensation is either direct, like touch, or indirect through a medium, like sight or hearing, we go on to state that] (1) All the tangible properties of objects are apprehended by touch, a sense which we possess. (2) As regards sight, hearing and smell, in which perception is through a medium, if the sense is wanting, it is because the sense-organ is wanting [this is so because animals, as such, possess the sensitive faculty which, given the appropriate organ, ensures every form of actual perception] [§ 1]. (3) Sense-organs are composed of the same elements as the corresponding media. (4) One and the same element may be the condition of our perceiving more than one kind of sensible: thus air is the medium of both colour and sound. And, if the same sensible can be perceived through the medium of more than one of the elements, as colour either through transparent air or through transparent water, either one of these two elements will serve to constitute the sense-organ [§ 2]. (5) Among the elements, however, two only, viz. air and water, are fitted to form sense-organs [§ 3]. (6) Now sense-organs thus constituted, i.e. of air, water or both, are actually possessed by animals. [The sense-organ need not be wholly composed of the element essential to perception.] The inference from all this is that all possible means of sense-perception are possessed by animals, unless they be mutilated or not fully developed [§ 4].

It has been doubted whether the foregoing argument is an induction or a demonstration. In the *History of Animals* (IV. 8, 532 b 29), where the same question is treated, A. appeals to experience: *περὶ δὲ τῶν αἰσθήσεων νῦν λεκτέον· οὐ γὰρ ὁμοίως πᾶσιν ὑπάρχουσιν, ἀλλὰ τοῖς μὲν πᾶσαι τοῖς δ' ἐλάττους. εἰσὶ δ' αἱ πλεῖσται, καὶ παρ' ἃς οὐδεμία φαίνεται ἴδιος ἑτέρα, πέντε τὸν ἀριθμὸν κτέ.* Cf. *De Sensu* 5, 444 b 19. But we hold with Alexander and Simplicius that the reasoning here is deductive. Cf. Alex. Aphr., *ἀπ. καὶ λύσ.* III. 6, p. 90, 3 sqq., *De An.* 66, 3 sqq., Simpl. 173, 32 sq., 175, 34 sqq., 178, 36 sqq. Hegel is credited with having demonstrated, the very year in which the first asteroid was discovered, that seven must be the number of the planets. Aristotle, too, may well have thought that the plain fact of experience, "there are five senses and no more," would be none the worse for being strongly fortified by argument. It goes without saying that the premisses of his hypothetical syllogisms are neither logically prior to nor better known than the fact they are supposed to establish. However, a different complexion will be put upon this dialectical feat if we accept the suggestion that it is directed against a supposed fanciful tenet of Democritus who, according to late authorities, maintained that some animals have senses which are lacking to man and that the number of *αἰσθήσεις* is

greater than the number of *αἰσθητά*, so great indeed that they escape observation. The point is obscure, but, if any preceding philosopher indulged in such speculations as Stobaeus fathers upon Democritus, it would be not unnatural for A. to oppose them, not merely by the common-sense statement that things are what they are, but by an attempt to prove that they must be so and cannot be otherwise. See Aet., *Plac.* IV. 10, 4, 5 (*Doxogr. Gr.* p. 399, 15) *πλείους εἶναι αἰσθήσεις, περὶ τὰ ἄλογα ζῷα καὶ περὶ τοὺς σοφοὺς καὶ περὶ τοὺς θεούς*, and again *ib.* 399. 19 Δ. *πλείους μὲν εἶναι τὰς αἰσθήσεις τῶν αἰσθητῶν, τῷ δὲ μὴ †ἀναλογίζειν τὰ αἰσθητὰ τῷ πλήθει λανθάνειν*, Lucret. IV. 794—803, Krische, *Forschungen* 154, Zeller, *Phil. d. Gr.* I.[6] 912, *nn.* 1, 2, Natorp, *Forschungen* 177, *n.* (cf. *Archiv f. Gesch. d. Phil.* I. 350 sqq.), Siebeck, *Gesch. der Psych.* I. 114, *n.* 2, Diels, *Vorsokr.* p. 388, Beare 206 sq. It is assumed throughout that fire, air, earth and water are the only "elements" in our region of the physical universe: hence the qualification in 425 a 11 "provided there exist no unknown body with unknown properties." This caution would safeguard the argument in the event, however improbable A. may have considered it, of the discovery of new forces in nature and new senses in living things correlative to them.

424 b 24. εἰ γάρ. Here begins the first of six clauses of a complex protasis, followed at length in 425 a 9 by an apodosis *πᾶσαι ἄρα κτέ.* Bonitz, to whom the elucidation of the construction is due, paraphrases the first clause as follows: *εἰ γὰρ καὶ νῦν αἴσθησιν τούτων πάντων ἔχομεν ὧν ἡ αἴσθησις ἁφῇ γίγνεται.* Madvig questioned this punctuation, proposing in its place *εἰ γὰρ παντός, οὗ ἐστιν αἴσθησις, ἁφή, καὶ νῦν αἴσθησιν ἔχομεν κτέ.* in order to make out that *ἁφὴ* is involved in all the senses. But touch is here discriminated from the senses which have separable media, the flesh—as explained in II., c. 11—being an inseparable medium of touch. **καὶ νῦν**, "as it is," "constituted as we are." In these words there is a suggestion of a difference between the natural and the possible. See 425 a 9.

b 25. πάντα γάρ. This is the first of many parentheses which complicate and retard the course of the argument. The statement seems to differ from the premiss, which it purports to prove, by the careful qualification of *τὰ τοῦ ἁπτοῦ ...πάθη* by *ᾗ ἁπτόν* (int. *τὸ ἁπτόν ἐστιν*).

b 26. ἀνάγκη τ'. This is the second premiss. **ἐκλείπει.** For this use of the word cf. *Anal. Post.* I. 18, 81 a 38 *φανερὸν δὲ καὶ ὅτι, εἴ τις αἴσθησις ἐκλέλοιπεν, ἀνάγκη καὶ ἐπιστήμην τινὰ ἐκλελοιπέναι.*

b 27 ὅσων μὲν...29 ὅσα δέ. The stress is on the second of the antithetical clauses, which introduces objects of "mediate" perception and so constitutes the third premiss, the *μὲν* clause merely rehearsing the contents of the first premiss.

b 28. αὐτῶν ἁπτόμενοι. Here and in b 29 *μὴ αὐτῶν ἁπτ.* we must understand *τῶν αἰσθητῶν*. In this passage A. even goes so far as to speak of the two senses which work through an inseparable medium as working by immediate contact. This is inexactly stated, but there is no uncertainty as to A.'s real position. We perceive tangibles "by direct contact" only in the sense that we are proprietors of the medium, while of air and water we are not proprietors. The inexact statement of the text, in fact, returns to the popular view which had been corrected in II., c. 11. See 426 b 16, 435 a 17 and *note* on 423 b 11. The phrase also recurs *De Sensu* 7, 449 a 24 *καὶ ὅσων μὴ αὐτῶν ἁπτόμενοι αἰσθάνονται.*

b 29. διὰ τῶν μεταξύ, "through media," i.e. through separable media, for A. adds his own explanation in the words *λέγω δ' οἷον ἀέρι καὶ ὕδατι* in 424 b 30.

b 30. τοῖς ἁπλοῖς, int. *αἰσθανόμεθα.* The words practically repeat *διὰ τῶν μεταξύ*, defining it a little more closely.

b 31. ἔχει δ' οὕτως, ὥστε. The clause with ὥστε, a clause of actual result, expresses how the case stands: "if on the one hand...then it is necessary (b 32 ἀνάγκη ἐστὶ) that...; if on the other...then the possessor of either of these will perceive (425 a 2 *καὶ ὁ τὸ ἕτερον...αἰσθήσεται κτέ.*)." It will be seen that ἔχει δ' οὕτως ὥστε is merely a variant on the more common συμβαίνει ὥστε and might be translated "this being so, it follows that." **ἕτερα...32 τῷ γένει,** "generically different," as colours, odours and sounds, μὴ ὁμογενῆ (431 a 24). The test of identity or difference of sensibles as given in *De Sensu* 7, 447 b 21—26 is that the object is numerically one, provided it be perceived in the same instantaneous act: it is specifically one and the same, if perceived by the same sense and in the same manner.

b 32. τὸ τοιοῦτον, i.e. corresponding to the medium.

b 34. ἔστιν ὁ ἀὴρ καὶ ψόφου καὶ χρόας, "the air is related to, stands in relation with, both sound and colour." Cf. 418 a 12, *note*. As being diaphanous, air is the medium of colour, while, as διηχής, it is the medium for sound. **εἰ δὲ πλείω,** i.e. if there be more media than one.

425 a 1. τοῦ αὐτοῦ, int. αἰσθητοῦ ἐστίν. **οἷον χρόας καὶ ἀὴρ καὶ ὕδωρ,** "for example, both air and water are media of colour."

a 2. καὶ ὁ τὸ ἕτερον, even the percipient who has but one of the two. Of the two media only one is available for him. **τοῦ δι' ἀμφοῖν,** int. αἰσθητοῦ, the object that is capable of being perceived through both media, air and water.

a 3. τῶν δὲ ἁπλῶν. Partitive genitive depending on δύο τούτων, with which μόνον goes closely: "it is from these two alone of the simple bodies that etc." **αἰσθητήρια.** From this point onward it must be noted that A. uses the word in a narrower sense for the organs of the telepathic senses, sight, hearing and smell, as distinguished from touch, which, in conformity with the popular opinion, he considers to be effected by direct contact. See Beare, p. 245, also *note* on 424 b 28 *supra*. For another instance of αἰσθητήριον in this narrower sense see 435 a 15 and *note*.

a 4. ἡ μὲν γὰρ κόρη. Cf. *De Sensu* 2, 438 b 16 *ὥστ' εἴπερ τούτων τι συμβαίνει, καθάπερ λέγομεν, φανερὸν ὡς εἰ δεῖ τοῦτον τὸν τρόπον ἀποδιδόναι καὶ προσάπτειν ἕκαστον τῶν αἰσθητηρίων ἑνὶ τῶν στοιχείων, τοῦ μὲν ὄμματος τὸ ὁρατικὸν ὕδατος ὑποληπτέον, ἀέρος δὲ τὸ τῶν ψόφων αἰσθητικόν, πυρὸς δὲ τὴν ὄσφρησιν.* This passage agrees with *De A.* as to the eye and the ear. It differs as to the organ of smelling, because the object of smell, which the organ is potentially, is differently conceived, viz. as *καπνώδης ἀναθυμίασις*, whereas it was ξηρὸν 422 a 6, as it is ἔγχυμον ξηρὸν in *De Sensu*, c. 5. This discrepancy in respect of the organ of smell has led some to think that it is not his own view which A. is there expounding. See Baeumker, *Arist. Lehre v. d. äussern und innern Sinnesvermögen*, pp. 30 sq., 47, *n.* 4, Zeller, *Aristotle*, II. p. 62, *n.* 3, E.T.: cf. Alex. Aphr., ad *De Sensu* 37, 7 sqq., 38, 12 sqq. W. But A. may have subsequently modified an earlier view as to the composition of the organ of smell. See Prof. Beare, p. 148, *n.* 5, p. 155 and Mr G. R. T. Ross *ad loc.* The former suggests (p. 155) that cc. 2 and 5 of *De Sensu* may have been written at a considerable interval of time from each other and (p. 282) that c. 7 of the same work was "perhaps chronologically Aristotle's first essay on the subject of simultaneous perception of different sensibles," i.e. earlier than *De A.* III., c. 2. "The *de Sensu* seems to contain," he says, p. 244, *note*, "preliminary essays on certain subjects of the larger work *de Anima*, which may therefore (notwithstanding many references, e.g. 436 a 1 sqq.) be regarded as possibly later." In plan and intention *De A.* certainly came before the *Parva Naturalia*, as is fully borne out by the anticipations and cross-references. But doubtless these courses of lectures

were several times repeated with additions and modifications, so that some things in the subsidiary lectures may be chronologically earlier than some things in the principal course, the *De A.* as we now have it.

a 4 ἡ δ' ἀκοὴ...5 ὄσφρησις. Here, as above 419 a 13, 423 b 19, the term properly denoting the operation of a sense is used to denote the corresponding organ. For ὄσφρησις used of the organ cf. *De Sensu* 2, 438 b 20 πυρὸς δὲ τὴν ὄσφρησιν, cited in the last *note*. Cf. also *De Gen. An.* II. 6, 744 a 2 ἡ δ' ὄσφρησις καὶ ἡ ἀκοὴ πόροι συνάπτοντες πρὸς τὸν ἀέρα τὸν θύραθεν, πληρεῖς συμφύτου πνεύματος, 425 a 7 ἐν τῇ ἁφῇ.

a 5. θατέρου, "of one or other" of these, viz. of water in the case of water-animals, of air in the case of land-animals. **τὸ δὲ πῦρ ἢ οὐθενός,** int. αἰσθητικοῦ. Fire is related to, is the medium of, no sense-faculty. As the medium is between the percipient faculty and the perceived object, it may be described as related to either; and the context, οὐθὲν γὰρ ἄνευ θερμότητος αἰσθητικόν, shows that here the reference is to the percipient. The same remark applies to a 6 γῇ. Cf. 435 a 11—24.

a 7. ἐν τῇ ἁφῇ. Cf. *De Sensu* 2, 438 b 30 τὸ δ' ἁπτικὸν γῆς [int. ἐστίν]. **μάλιστα,** more than in any other perceptive organ or part. **ἰδίως** qualifies μέμεικται. The presence of earth in the organ is essential to its performance of its function. It has to perceive all tangible qualities, of which the properties belonging to earth are some of the most important. Cf. 435 a 22 sq. The presence of fire ensures that the remaining tangibles are perceptible. **διὸ λείποιτ' ἄν.** This means that, if we take away air and water, there is nothing left of which to make a sense-organ. Fire will not do, earth will not do, and we have already organs into whose composition air and water enter.

a 8. ταῦτα δέ, i.e. the sense-organs, αἰσθητήρια, constituted of air and water.

a 9. καὶ νῦν, "as it is," "even within our experience." Cf. 424 b 24, 425 a 22, b 9. **ἔνια.** From *Hist. An.* IV. 8, 532 b 33 we know that this includes all viviparous animals: ἄνθρωπος μὲν οὖν καὶ τὰ ζῳοτόκα καὶ πεζά, πρὸς δὲ τούτοις καὶ ὅσα ἔναιμα καὶ ζῳοτόκα, πάντα φαίνεται ἔχοντα ταύτας πάσας. **πᾶσαι ἄρα.** Here at last is the conclusion drawn from the unwieldy series of premisses which began with εἰ γὰρ παντός (424 b 24).

a 10. ὑπὸ τῶν...πεπηρωμένων, i.e. by the aforesaid animals, viz. as we know, the vivipara, if fully developed and unmutilated. Cf. 415 a 27 *note*. **φαίνεται γὰρ...11 ὀφθαλμούς.** Another parenthesis. The mole is regarded by Aristotle as belonging to the πεπηρωμένα. In the *Hist. An.* loc. cit., Aristotle excepts the mole as "an entire class" which is "maimed" (533 a 2 πλὴν εἴ τι πεπήρωται γένος ἕν, οἷον τὸ τῶν ἀσπαλάκων).

a 12. ἕτερον, other than those known to us in experience. This is shown to be the meaning of ἕτερον by the words which qualify πάθος. **καὶ πάθος.** If there were an unknown "elemental" body distinct from the four, it would presumably have distinct and unknown properties. **τῶν ἐνταῦθα,** the bodies found in our world, the world of actual experience. So τὰ ἐνταῦθα is contrasted with τὰ ἐκεῖ in *Metaph.* 990 b 34 ταὐτὰ δ' ἐνταῦθα οὐσίαν σημαίνει κἀκεῖ (in the world of ideas).

a 13. οὐδεμία ἂν ἐκλείποι. This sentence corresponds to and is equivalent to the sentence οὐκ ἔστιν αἴσθησις ἑτέρα παρὰ τὰς πέντε, with which we started 424 b 22.

Having proved that there are five senses and no more, A. proceeds to make the first use of his conclusion by demonstrating that the κοινὰ are really what he called them, "common sensibles." He does this by proving that they are not the province of any special sense. There could be no sense and no sense-organ

outside the five which he has described, and no one of these five apprehends the *κοινὰ* as *ἴδια* or *κυρίως αἰσθητὰ* to it in particular. This is the first step towards developing his doctrine of *sensus communis* or *ὅλη αἴσθησις* in which the five special senses are merged and coalesce, for the *κοινὰ* are perceived *καθ' αὑτὰ* and, since it is none of the special senses that so perceives them, it must be this *sensus communis*.

425 a 14—b 4. Can there be a special sense which apprehends as its province the "common sensibles," all of which we perceive by movement? The common sensibles are motion, rest; size (extended magnitude), figure; number, unity. Of these number and unity are also apprehended by means of the objects of the special senses. [Aristotle decides in the negative.] There can be no special organ for the apprehension of these common sensibles, and therefore no separate special sense. If there were, our perception of the common sensibles by any of the five senses would be either (*a*) on a par with that indirect apprehension which in fact we have of one quality, e.g. sweetness, by the special sense, e.g. sight, which perceives another [§ 5]. This, viz. our apprehension of sweetness by sight, is due to the circumstance that we have a sense [*sensus communis*] which has both sensibles for its object, and whereby we take cognizance of their simultaneous presentment. Or (*b*), if not like the perception of sweetness by sight, our perception of the common sensibles would be purely incidental, as is our recognition of Cleon's son in the white object which we see [§ 6]. But of the common sensibles we have a perception to which all the senses contribute, direct not incidental, and therefore not confined to a special sense; not, that is, like our apprehension that it is Cleon's son that we see [which is confined to sight]. In our apprehension, above explained, of the objects of one special sense by another perception is in a manner incidental; when the special senses operate not as separate, but in so far as they meet in one. To recognise the co-existence of different qualities in the same object requires a common, and not a separate or special, sense [§ 7].

425 a 14. **οὐδὲ τῶν κοινῶν.** Having rejected the hypothesis of a sixth sense dealing with special sensibles, *ἴδια αἰσθητά*, of its own, A. has now to consider the question whether we should assume a separate organ, and therefore a separate sense, for the apprehension of *τὰ κοινά*. These *κοινὰ* have been already introduced in II., c. 6. Them. puts the case ingeniously: 81, 18 H., 149, 28 Sp. "it may be said that there ought to be a special organ for the common sensibles, but that this is lacking to man." **αἰσθητήριον.** If there is no separate sense-organ, it will follow (cf. the statement above 424 b 26 sq.) that there is no separate sense, and this is the conclusion drawn below: *ὥστε δῆλον ὅτι* 425 a 20.

a 15. **ὧν ἑκάστῃ...κατὰ συμβεβηκός.** Torstrik followed the old Latin version in inserting the negative *οὐ* before *κατὰ συμβεβηκός*: then, he thought, the relative sentence would consistently express A.'s own view as laid down in II., c. 6, where *τὰ κοινὰ* are said to be perceived *καθ' αὑτά*, i.e. *οὐ κατὰ συμβεβηκός*. Cf. 425 a 28. Others suppose that A. is not stating his own view but what would be the effect of the hypothesis of a sixth sense for the *κοινά*, which he is refuting (cf. Simpl. 182, 38—183, 4). In that case, besides perceiving the *κοινὰ* directly by this sixth sense, we should indirectly perceive them by every special sense. I am dissatisfied with both these explanations and believe (1) that the words express A.'s own belief about *τὰ κοινά*, not the consequences which would follow if there were a special sense-orgah for them, and (2) that there is no need to insert the negative before *κατὰ συμβεβηκός*. In ordinary language we are said to perceive *things*, but the simplest psychological analysis shows that the proper objects of the special senses are qualities. A. adopts the convenient

assumption that the sensible thing may be regarded as a substratum, ὑποκείμενον or logical subject, with qualities, πάθη, which cannot exist apart from it, οὐ χωριστά. In II., c. 6 the special sensibles are qualities, colour, sound, odour etc., perceived directly by the special senses. The things or substances, ὑποκείμενα, in which the special sensibles inhere, are perceived *per accidens* and by the special senses. Thus Diares' son is seen *per accidens*. Of the κοινὰ we are told (*a*) that they are perceived directly, καθ' αὑτά; (*b*) that they are perceived by all the special senses, κοινὰ πασῶν, κοινὰ πάσαις; (*c*) that a certain movement is perceived both by touch and by sight. But it will be observed that A. does not say in II., c. 6 under (*b*) or (*c*) that the κοινὰ are *directly* perceived by the special senses. The brevity of his exposition might suggest this, but it would create a false impression: for in our present chapter (425 a 27 sq.) he states that we have a non-incidental, i.e. direct, perception of the κοινὰ and therefore, he argues, this common perception is not a special sense (οὐκ ἄρ' ἐστὶν ἰδία, int. αἴσθησις). Cf. *De Mem.* 1, 450 a 9—14, which implies that magnitude, motion and time are καθ' αὑτὰ αἰσθητὰ of the πρῶτον αἰσθητικόν. The same view is implied in the expressions κοινὰ πασῶν and κοινὰ πάσαις of II., c. 6, as will be evident on reflection. The proper object of sight (neglecting for the moment light, darkness, fire and phosphorescence) is colour. But none of the κοινὰ is colour: therefore none of the κοινὰ is *directly* perceived by sight, none of them is κυρίως αἰσθητόν, πρὸς ὃ ἡ οὐσία πέφυκε τῆς ὄψεως, περὶ ὃ μὴ ἐνδέχεται ἀπατηθῆναι: and, we may add, though this has been disputed, (418 a 23) οὐδὲν πάσχει ᾗ τοιοῦτον ὑπὸ τῶν κοινῶν τινὸς ἡ ὄψις, sight is not affected by any of the κοινὰ as such. Sight is not affected by magnitude as magnitude, by motion as motion, and so on, as it is affected by its κυρίως αἰσθητόν, or ἴδιον, colour. But (418 a 19 sq.) sight *is* affected by motion; we are led to the irresistible conclusion that a special sense is affected by a κοινὸν *per accidens*. Again, the argument by which A. concludes that Diares' son is *per accidens* an object seen will also apply to the κοινά. What the eye sees directly is colour, but the πάθος, colour, has for its logical subject the thing or substance, Diares' son. Directly the eye perceives the quality, indirectly it takes in the thing or substance to which the quality belongs. Now the case of the κοινά, though not quite on a par, is similar. If we take in the thing or substance *per accidens* by a special sense, we take in with the thing or substance its various attributes, even though these are not directly cognizable by that special sense. When we are aware of Diares' son, we are aware of motion, magnitude, number, shape, all of which are his attributes: they "go with" him or "accompany" him (425 b 5) ἀκολουθοῦντα καὶ κοινά, (b 8) ἀκολουθεῖν ἀλλήλοις ἅμα χρῶμα καὶ μέγεθος, (428 b 22) τῶν κοινῶν καὶ ἑπομένων τοῖς συμβεβηκόσιν [=the logical subjects], (b 23) κίνησις καὶ μέγεθος, ἃ συμβέβηκε τοῖς αἰσθητοῖς. In perceiving the things or substances, as we do, indirectly and incidentally by the special sense, we also perceive the attributes of these things or substances; and, so far as the perception is by the special sense, again indirectly and incidentally. Or rather, the content of sensation by any special sense is a confused whole, out of which that special sense itself cannot separate and abstract τὰ κοινά. To do so is the task of *sensus communis*, which in A.'s theory has usurped some of the purely intellectual functions assigned by Plato, *Theaet.* 185, 186, to the soul or mind.

a 15 οἷον κινήσεως...16 ἑνός. For the list of κοινὰ see *supra* 418 a 17 and *notes*. In the present passage ἓν is added. The reason doubtless is that in the common view of Greek mathematicians ἀριθμὸς implies plurality (*Metaph.* 1088 a 6 οὐκ ἔστι τὸ ἓν ἀριθμός), and "one" or "unity" is not a number, but

rather a principle of number, *Metaph.* 1021 a 12 τὸ δ' ἓν τοῦ ἀριθμοῦ ἀρχὴ καὶ μέτρον. Cf. the phrase τὸ ἓν καὶ τοὺς ἀριθμούς, *Metaph.* 987 b 29.

a 17. κινήσει αἰσθανόμεθα. The Greek commentators understand this to mean "by the movement which the sensible sets up" in us or, more explicitly, in one or other of the sense-organs. Them. is rather vague, but (81, 30 H., 150, 17 Sp.) κινεῖ τὸ αἰσθητήριον καὶ ἀλλοιοῖ καὶ ἐνδίδωσι τὴν ἰδίαν μορφήν, though not expressly commenting on the words, points in this direction. Simpl. comments directly on the words thus: 183, 4 τῷ τὸ μὲν αἰσθητήριον ἢ πάσχειν τι ὑπὸ τοῦ αἰσθητοῦ...ἢ καὶ ἄνευ πάθους...τὴν ἐνέργειαν τοῦ αἰσθητοῦ δεχόμενον...(10) ὑπὸ μὲν οὖν τῶν κοινῶν κινεῖται καὶ πάσχει ἑκάστη αἴσθησις. More explicitly Philop. 457, 29 κίνησιν δὲ λέγει τὸ πάθος, τὴν ἀλλοίωσιν· τὰ οὖν κοινὰ αἰσθητά, φησί, πάθος ποιεῖ. Cf. Prisc. Lyd. (ed. Bywater) 21, 20 δεῖ οὖν οὐχ οὕτω τῇ κινήσει λέγεσθαι γνωριστικοὺς ἡμᾶς εἶναι τῶν κοινῶν, ὡς προηγουμένως μὲν τῆς κινήσεως, κατὰ συμβεβηκὸς δὲ ἢ δευτέρως τῶν ἄλλων, ἀλλ' ὁμοίως μὲν πάντων τῶν κοινῶν, πάντως δὲ ἐπὶ πάντων τῇ κινήσει, τουτέστι τῷ ἀλλοιοῦσθαι, συναισθάνεσθαι. If the words are so taken, our knowledge of the common sensibles is not said (by A.) to be due to motion in the sense that motion is primarily perceived and the other κοινὰ only in a secondary or indirect fashion through it; but they are all alike and in all objects perceived through modification in the percipient. But how then are the κοινὰ in any way different from the ἴδια? The explanation tendered to us applies equally to colour, sound, odour, flavour. In fact, our investigation of sense began with the common opinion that sensation is an ἀλλοίωσις and πάθος, wherever found; so that the addition of κινήσει adds nothing to αἰσθανόμεθα. It appears to me, then, that this interpretation cannot be accepted. But the alternative course is not without difficulty. If we retain κινήσει, we may understand by it the perception of external movement. Siebeck has argued that this brings a wrong conception into the whole passage. It is startling to find our perception of the other κοινὰ made to depend upon our perception of one of them, κίνησις: and no use is made of the deduction. There is no attempt elsewhere to deduce these conceptions from motion, and number is expressly said to be logically prior to motion. Still, the perception of motion might help us to perceive what is prior to motion; and time, a
cn... common sensible, which is altogether omitted in II., c. 6 and the present
in *Phys.* I...er, might truly be said to be perceived by the perception of motion. But
τὸ συνεχές, and ...v. 11, 219 a 12 sqq. magnitude, motion and time are all instances of
tinuity of magnit... the continuity of motion and of time are deduced from the con-
συνεχής, διὰ δὲ τὴν κίνησιν ὁ χ...ιὰ γὰρ τὸ τὸ μέγεθος εἶναι συνεχὲς καὶ ἡ κίνησίς ἐστι
δοκεῖ γεγονέναι. The motion is co...όνος· ὅση γὰρ ἡ κίνησις, τοσοῦτος καὶ ὁ χρόνος ἀεὶ
but we should not know that the mag...tinuous because the magnitude is continuous,
were so: and in that sense we may say ...itude was continuous, unless the motion
450 a 9—14. On the whole it is not unlike A. to sta...εθος κινήσει. Cf. *De Mem.* 1,
upon a very slight occasion. It would be reading ...rt a cognate investigation
psychology into A. to interpret κινήσει, not of external moven... the ideas of modern
but of local movement of the percipient, especially movement ...ent as perceived,
hand. Torstrik, in making his fine emendation κοινῇ for κινήσει, ... perceiv... of the eye and
to Simpl. by the Aldine edition (see 184, 7 Hayduck). There can be no ... by ... as misled as
the text of Simpl. was κινήσει: cf. 183, 4, 30. If we accepted the em...es whic... lieve ... doubt that
the meaning of the passage would be rendered much simpler and more c...re is no ne... dation,
and a good antithesis given to the ἰδίαν of a 21: "because we always pe...ge we are
the common sensibles together, therefore there cannot be a special sense ...that the
any one of them, e.g. for motion." This is not in conflict with the following ...ent

statement, a 27, for *sensus communis* is not a special sense. The same end might be secured by inserting κοινῇ before κινήσει.

a 17. μέγεθος κινήσει. Simpl. understands *μέγεθος* to be apprehended by the amount or intensity of the impression produced on sense: (183, 17) *ὅτι γὰρ καὶ ὡς μέγεθος εἰς τὸ αἰσθητήριον δρᾷ τὸ αἰσθητόν, δηλοῖ ἡ ἀπὸ τῆς χιόνος ὡς λευκῆς τῇ ὄψει ἐγγινομένη βλάβη τῆς ἐπὶ πολὺ ἐκτεταμένης πεδίον, ἀλλὰ καὶ ὁ ἐκ τοῦ μεγάλου πεσόντος λίθου μᾶλλον πλήττων ἦχος.* Cf. *Categ.* 6, 5 b 6—8. Philop. mentions the same explanation (458, 19) *εἰ μὴ ἄρα εἴποις ὅτι μέγεθος λέγει τὸ ἐν ἑκάστῃ αἰσθήσει καὶ οὐκ ἐν ποσῷ, οἷον μέγαν ψόφον ἢ μέγα λευκόν.* Cf. Plato, *Tim.* 67 B of sound *μεγάλην δὲ τὴν πολλήν* [int. *κίνησιν*], "if the movement is large, the sound is loud" (Archer-Hind). The connexion between spatial magnitude and motion as *percepta* gives a far more satisfactory interpretation.

a 18. μέγεθος γάρ τι τὸ σχῆμα. Philop. informs us (458, 23 sqq.) that an objection was raised (*φασί τινες*) on the ground that in *Categ.* 8, 10 a 11 *σχῆμα* is a *ποιόν*, while *Metaph.* 1020 a 9 *μέγεθος* is a *ποσόν*. Cf. Simpl. 183, 22 sq. *κατὰ γὰρ τὸ ὑποκείμενον ὡς ὕλῃ τῷ μεγέθει χρώμενον, ὡς καὶ τὸ βάθρον ξύλον λέγομεν, ἐπεὶ ὑπὸ τὸ ποιὸν πᾶν σχῆμα.* In the words of Philop. (458, 30), *μέγεθος* here means *τὸ ἐσχηματισμένον*, not *τὸ σχῆμα.* **τῷ μὴ κινεῖσθαι.** Rest is the cessation of motion, and the knowledge of contraries is one, 411 a 3 sq. Cf. *τῇ ἀποφάσει* 425 a 19; also *ἡ στέρησις* 430 b 20—23: also 422 a 23 *ἀκοὴ καὶ σιγῆς*, which must be the cessation of movement, if sound is movement. The Greek commentators, if consistent, must explain the perception of rest by the absence of an impression upon the sense. But Philop. (458, 31—36) is obliged to admit that it is the cessation of the motion in the external object which brings our internal *πάθος* to a halt. We do not cease to have a *πάθος*, but it does not change: *τὰ ἱστάμενα ὁρῶμεν μήτε μειουμένου μήτε αὐξανομένου τοῦ πάθους, διότι ἵστανται.* He adds the shrewd observation *τὰ δὲ κινούμενα ἄλλως καὶ ἄλλως ὁρῶμεν ἢ μειουμένου ἢ αὐξανομένου τοῦ πάθους πρὸς τὴν κίνησιν αὐτῶν.* Simpl. scouts the notion that it is by *στέρησις* of motion that rest is perceived: (183, 25) *τὸ δὲ ἠρεμοῦν τῷ μὴ κινεῖσθαί φησιν, ἵνα σαφηνίσῃ, ὅπως εἴρηται τῇ κινήσει, ὅτι οὐχὶ τῷ αὐτὰ κινεῖσθαι. τὸ γοῦν ἠρεμοῦν οὐ κινούμενον ὅμως γνωρίζεται, ὡς αὐτὸ μὲν μὴ κινούμενον, κινοῦν δὲ καὶ αὐτὸ τὴν αἴσθησιν...προείρηται γὰρ ὡς πάντα κινήσει αἰσθανόμεθα, καὶ αὐτὴν τὴν στάσιν.*

a 19. τῇ ἀποφάσει τοῦ συνεχοῦς. The perception of unity and number is analogous to that of motion and rest, the latter being in each case the contrary of the former. The *ἕν* of 425 a 16 is here represented by *τὸ συνεχές.* It is a concrete unit and the numbers which it would generate would also be concrete. A quantum, *ποσόν*, is said to be either continuous, like magnitude, or discrete, like number. **καὶ τοῖς ἰδίοις**, int. *αἰσθητοῖς γνωρίζεται.* The verb to be supplied must, owing to the construction having been changed, be passive. Simpl. (184, 5—9) would not confine *καὶ τοῖς ἰδίοις* to the case of number, but would make it apply to all the *κοινά*: at least, so I understand his suggestion that the words ought to be joined with a 17 *πάντα κινήσει αἰσθανόμεθα.* Such a huge parenthesis seems too much even for A.

a 20. ἑκάστη γὰρ ἕν. This shows how number can be said to be apprehended *τοῖς ἰδίοις*, i.e. by or in the special sense-objects. Every one of the five senses apprehends unity, because each sensation is one: one colour, one sound etc., and number is a plurality of units, *πλῆθος μονάδων.* Thus unity is apprehended apart from extension. Cf. *De Sensu* 7, 447 b 21 sqq. After arguing that it is impossible to have two sensations simultaneously when they fall under the same sense, and still more impossible when they belong to two separate senses, A. then continues (b 24) *φαίνεται γὰρ τὸ μὲν τῷ ἀριθμῷ ἓν ἡ ψυχὴ οὐδενὶ*

ἑτέρῳ λέγειν ἀλλ' ᾗ τῷ ἅμα [int. *αἰσθάνεσθαι*], *τὸ δὲ τῷ εἴδει ἐν τῇ κρινούσῃ αἰσθήσει καὶ τῷ τρόπῳ κτέ.* The instantaneous single act implies the single object. Again, since there are a plurality of senses, the plurality of their objects similarly furnishes plurality apart from extension. The *ἐν* here (425 a 20) recalls, and has the same meaning as, the *ἑνὸς* of a 16. But, unless we postulate memory, the "hoarding sense," or a *sensus communis* capable of apprehending simultaneously more than a single object, it is difficult to see how successive single acts of sensation, however numerous, can be apprehended by mere sense as number. Cf. *note* on 424 b 31 **ἑτέρα**. **ὥστε δῆλον.** A., having shown how in his view the *κοινὰ* are perceived by means of each of the five senses *κατὰ συμβεβηκός*, now draws the conclusion that the common sensibles cannot be the proper province of any one of these senses; and he has already proved that there are only these five senses; therefore the common sensibles are not the exclusive province of any single special sense.

a 21. ὁτουοῦν...τούτων, "any one whatever of these common sensibles." The inference would be clearer if put the other way: no single one of the five or six *κοινὰ* belongs especially and exclusively to any special sense. **οὕτω γὰρ ἔσται.** Cf. 426 b 19 *οὕτω μὲν γὰρ...δῆλον ἂν εἴη*. In both passages we have expressed what would be the result of an inadmissible supposition: here "if there were a special sense," as there cannot be. For, if there were, then (*οὕτω*) the perception of motion or magnitude or number, which is conjoined with a given special sensible, would be related to it as sweetness is now to white colour when these qualities are united in the same object and we are said to perceive them both by sight. Cf. Neuhaeuser, *Arist. Lehre*, p. 32 sq.

a 22. αἰσθανόμεθα. This statement of A. clearly stands in need of correction. From the sight of a white object we may infer its sweetness, or from the previous experience of the conjunction of whiteness and sweetness in the same object we may anticipate a similar conjunction now; but in neither case can we be properly said to *perceive* sweetness. Below, a 30, a similar statement is qualified by *κατὰ συμβεβηκός*. Philop. substitutes the *sensus communis* for sight: at least, so I understand 460, 1 *ἀμφοῖν δὲ λέγει τὴν κοινὴν αἴσθησιν. ἐπειδὴ γὰρ ἔχομεν, φησίν, αἴσθησιν καὶ γλυκέος καὶ ξανθοῦ, ὄψιν καὶ γεῦσιν,* **ταύτῃ** *ὅταν ἐμπέσῃ χρῶμα ξανθόν, κινουμένου τοῦ τύπου τοῦ γλυκέος γινώσκομεν ὅτι μέλι ἐστὶν ἐκ τοῦ τύπου οὗ ἔλαβεν, ὅτε ἅμα ὄψις καὶ γεῦσις ἐνήργησαν.* A similar case is *Eth. Nic.* 1113 a 1; we can *see* the loaf is properly baked. **τοῦτο δ' ὅτι** = *τοῦτο δὲ ὧδε συμβαίνει ὅτι*, "and this comes about because."

a 23. ἀμφοῖν, of sweet and white. **ἔχοντες τυγχάνομεν.** Cf. 424 b 29. **συμπέσωσιν.** The word *συμπίπτειν* in A., as in Plato, is used to denote *concurrence* of sensations, qualities and the like. Cf. *Eth. Nic.* 1171 a 7, Plato, *Rep.* 402 D, *Tim.* 75 B, *Phil.* 39 A *ἡ μνήμη ταῖς αἰσθήσεσι ξυμπίπτουσα εἰς ταὐτόν.*

a 24. ἅμα γνωρίζομεν, "we cognise both simultaneously," or co-instantaneously. This throws some light on the *αἴσθησις* just mentioned. The characteristic of all the special senses is that they cannot perceive more than one object in one single act of sensation (see the discussion of the question, *De Sensu*, c. 7): nor can two special senses produce sensations simultaneously. When two or more objects are judged co-instantaneously the sense at work is what is technically known as *κοινὴ αἴσθησις*, *sensus communis*. Simpl. (184, 22 sqq.), ignoring *ἅμα*, prefers to explain *ἀμφοῖν...αἴσθησιν* by [*αἰσθήσεις*] *διαφόρους δηλαδή, χρώματος μὲν τὴν ὄψιν οὖσαν, τοῦ δὲ γλυκέος τὴν γεῦσιν* and to take *ᾗ*, not as the relative, but as equivalent to *καθ' ὅ*, as in 423 b 22, 426 b 15. Philop., on the other hand, gratuitously introduces *πρότερον* (with a present tense), following Plutarch: (459, 32) *λείπει γὰρ ἐν τῷ ῥητῷ τὸ πρότερον, ὥς φησι Πλούταρχος.* His

explanation comes to this: yesterday (455, 24) we both saw and tasted sugar, to-day we see it but do not taste it: the sight of white to-day acts upon the impression (τύπος) of yesterday's white stored up in the *sensus communis* and through it on the impression of sweet, also stored up there. But even so the αἰσθανόμεθα of a 22 is inaccurate. In place of two objects simultaneously present we have a present object and a memory or image of a past object. **εἰ δὲ μή.** Neuhaeuser supplies *ἀμφοῖν ἔχοντες ἐτυγχάνομεν αἴσθησιν.* It would come to the same thing if we supplied οὕτως ἔσται from a 21. Grammatically one might go back to a 20 ἀδύνατον, and so Philop. may have understood it (460, 6—9). The hypothesis of a single special sense for τὰ κοινὰ still holds the field. What will follow? One of two consequences. The first has been considered: τὰ κοινὰ and τὰ ἴδια would be perceived by the special sense as it now perceives the ἴδιον of some other special sense along with its own ἴδιον, experience having generated an inseparable association: whereby, however, it is sometimes deceived (425 b 3). This is the most favourable case. But the link between κοινὰ and ἴδια as perceived by the same special sense might be weaker: there might be no inseparable association. If there were not (εἰ δὲ μή), we should say that we perceived motion and magnitude by sight or any other special sense on no better grounds than we now say that we perceive Cleon's son by sight. Cf. 418 a 21—23. As appears from 425 a 30, even the inseparable association of sweetness and colour is only perceived κατὰ συμβεβηκός, and Them. and Philop. both point out that the phrase is used in two different senses in the two cases.

a 24. οὐδαμῶς ἂν ἀλλ' ἢ κατὰ συμβεβηκός. Strictly speaking, in the case supposed "sweetness" is a *κατὰ συμβεβηκὸς αἰσθητόν.* This follows from the test proposed in 418 a 23. Sight is not acted upon by the sweet thing as such (*οὐδὲν πάσχει ᾗ τοιοῦτον ὑπὸ τοῦ αἰσθητοῦ*, int. τὸ αἰσθητήριον). But the fact is that there are degrees of "indirectness"; the phrase "*per accidens*," that is, or κατὰ συμβεβηκός, admits of different applications according to the degree of remoteness. Cf. *Phys.* II. 3, 195 b 1 *ἔστι δὲ καὶ τῶν συμβεβηκότων ἄλλα ἄλλων πορρώτερον καὶ ἐγγύτερον.* The difference here seems to be between the recognition of a quality formerly perceived on the occurrence of one with which it was then conjoined, and the recognition of an attribute that may never have been so conjoined and has in fact no permanent connexion with the quality which we do perceive. So Them. (81, 35 H., 150, 23 Sp.) *διττὸς γὰρ ὁ τρόπος τῶν κατὰ συμβεβηκὸς αἰσθητῶν· ἢ γὰρ ὅταν τῇ ὄψει κρίνωμεν τὸ γλυκύ,* (82, 7 H., 151, 10 Sp.) *ἕτερος δὲ ὅταν προσιόντα τὸν Κλέωνος υἱὸν θεασάμενοι μὴ τοῦτο ἀποφαινώμεθα μόνον ὅτι λευκός, ἀλλ' ὅτι καὶ Κλέωνος υἱός.* So Philop. 454, 15 sqq.

a 25. οἷον τὸν Κλέωνος υἱόν, int. αἰσθανόμεθα. **οὐχ ὅτι Κλέωνος υἱός, ἀλλ' ὅτι λευκός.** I have translated this as if ὅτι meant "that," which apparently is the view of Them. as just cited; but it is more probable, when we compare 418 a 22, that here, as there, ὅτι means "because." We perceive Cleon's son not because he is Cleon's son, but because he is white.

a 26. τούτῳ, int. τῷ λευκῷ, "the white colour that we see." Of this white colour it is (in Aristotelian phrase) "an accident" that it is Cleon's son. Substance is conjoined with accident. See *notes* on 418 a 22 sq. The υἱῷ is dative by attraction to τούτῳ.

a 27. αἴσθησιν κοινήν, "a common sensibility," namely that which serves as a common basis to all the special modes of sense-perception (αἰσθήσεις), i.e. the five senses. The modern associations of the term "common sense" preclude its use as an equivalent of Aristotle's κοινὴ αἴσθησις or as an exact philosophical term at all. Both Simpl. and Philop. deny that the term is used here in the technical sense, but I am not satisfied that they are right.

a 28. οὐ κατὰ συμβεβηκός. Compared with perception of sweetness on sight of a white object which is sweet, or, still more, compared with perception of Cleon's son on sight of a white object which happens to be that person, perception of "common sensibles" by the *κοινὴ αἴσθησις* is direct and *not incidental.* The ordinary interpretation of the chapter makes this statement contradict the traditional text of a 15. But see *note.*

a 28. οὐκ ἄρ' ἐστὶν ἰδία, int. *αἴσθησις τῶν κοινῶν αἰσθητῶν*. If they are directly perceived by a "common sensibility," it follows that there is no one of the five nor any special sixth sense to which they are related as special objects.

a 29. οὕτως ὥσπερ εἴρηται. It has been remarked that, in order to completeness, A. should have added here the other case of indirect "perception" (so-called), to which in fact he recurs in the next sentence.

a 30. τὰ δ' ἀλλήλων ἴδια, "one another's proper objects." A., having claimed the *κοινὰ* for *sensus communis*, goes on to show how it sometimes judges **ἴδια,** as he had already hinted a 22—24.

a 31. οὐχ ᾗ αὐταί, "not in their own right as so many separate senses." **ἀλλ' ᾗ μία,** "but as forming (for the time being) one sense." Philop. (*461, 5*) *οὐχ* <*ᾗ*> *αὐταί* (int. *αἱ πέντε αἰσθήσεις*), *ἀλλὰ κατὰ τὸ ἔχειν μίαν κοινὴν αἴσθησιν*. From *ἅμα* he argues *μία αἴσθησις*.

425 b 1. ἐπὶ τοῦ αὐτοῦ, int. *αἰσθητοῦ*: "in the case of the same thing." Cf. *Phys.* VIII. 3, 254 a 6 *ὁρῶμεν γὰρ καὶ ἐπὶ τῶν αὐτῶν γιγνομένας τὰς εἰρημένας μεταβολάς*. **χολήν,** int. *αἰσθάνεται*, the singular being borne out by b 3 *ἀπατᾶται* and *ἐὰν ᾖ ξανθόν* [int. *τὸ αἰσθητόν*], *χολὴν οἴεται εἶναι*. The anticipatory accusative seems more in conformity with Attic usage than the nominative preceding *ὅτι* as read by Biehl in his second impression. The genitive *χολῆς* (Simpl. in interpr. 186, 12, but apparently citing the text) is probably assimilated to *τοῦ αὐτοῦ*; it might also be joined with *γένηται ἡ αἴσθησις*.

b 2. ἑτέρας γε. It belongs to no other sense, distinct from the *κοινή*, to affirm the co-existence in one object of two or more qualities. We should have expected *οὐδετέρας*, neither sight nor taste. Judgments of identity and difference are claimed for the *sensus communis* in the next chapter, 426 b 14 sqq. **ἄμφω,** *τὸ ξανθόν τε καὶ πικρόν* (Simpl. 186, 18).

b 3. διὸ καὶ ἀπατᾶται, int. *ἡ αἴσθησις*. Sense is liable to be deceived in this reference of qualities to objects, whereas, as was emphasised in 418 a 12, no single sense is ever deceived about the qualities which it directly perceives (*καὶ οὐκ ἀπατᾶται ὅτι χρῶμα οὐδ' ὅτι ψόφος, ἀλλὰ τί τὸ κεχρωσμένον ἢ ποῦ, ἢ τί τὸ ψοφοῦν ἢ ποῦ*, 418 a 15). The inference is that it is not the special sense functioning with its proper objects which is at work when we are said to see sweetness by sight.

425 b 4—11. The final cause of a plurality of special senses is to ensure the recognition of the common sensibles. If sight were our only sense in a world of colours, certain attributes of things would elude us altogether. It would not be easy to detect magnitude and the other common sensibles, for they would never be found apart from colour [§ 8].

425 b 4. τίνος ἕνεκα. Why, if the several senses combine, as we have seen, for certain purposes, there should be a plurality of senses at all. I see no reason to restrict the question with Simpl., who would understand *τῶν κοινῶν* after *αἰσθήσεις* (186, 26), on the ground that there are other reasons for a plurality of senses, which A. does not mention here.

b 5. ἢ ὅπως. Aristotle's answer. It is that a plurality of senses better secures the recognition of the common sensibles. A., always teleological in his

enquiries, urges the necessity that such qualities as magnitude and number should be made familiar, and that their importance should be forced upon us by their being presented in a variety of ways.

b 5. **τὰ ἀκολουθοῦντα καὶ κοινά,** "the accompaniments of the objects of the special senses which are common to all the senses." The "common sensibles" are fitly called *ἀκολουθοῦντα* because the "special sensibles" (colour, sounds, tangible qualities) are always accompanied by one or more of them. Thus everything perceptible has *number*, is either at *rest* or in *motion*, and things in space have magnitude (*μέγεθος*) and shape.

b 6. **εἰ γὰρ ἦν ἡ ὄψις μόνη.** We may compare the imaginary case put for the sake of argument *Metaph.* 1053 b 32 if all things were colours, and again (*ib.* b 35) if all were melodies or (1054 a 1) sounds or (a 3) rectilinear figures.

b 7. **αὕτη λευκοῦ.** Here I have adopted Professor H. Jackson's conjecture, *αὕτη* for *αὐτή*. More than once in the treatise *αὐτὴ* is suspicious, but in 415 b 10, 427 b 15 it has an appropriateness which I fail to discover here. **ἐλάνθανεν ἄν,** int. *τὰ κοινά*. We might have failed to discern the common sensibles as distinct from *τὰ ἴδια*. Sight would in relation to *τὰ κοινὰ* be in the same position as that in which all special sensibles would be in the case supposed above 425 a 21—27, viz. of the existence of a special sense for the *κοινά*. Cf. again the consequences which would follow in the imaginary case put 423 a 6—11.

b 8. **πάντα,** "all sensibles," that is *κοινὰ* and *ἴδια* alike. There would in fact in the supposed case be no distinction: all sensibles would be *ὁρατὰ* and, in fact, colour, just as now various species of quality are merged in the object of touch. **διὰ τὸ...9 μέγεθος.** The only *μέγεθος* which he would perceive would always be coloured.

b 9. **ἐν ἑτέρῳ αἰσθητῷ,** "in a second object," i.e. one which is the object proper to a sense other than the sense which perceives this common sensible at first: e.g. magnitude may be first perceived by sight and then perceived by touch in a tangible object (*ἐν ἑτέρῳ*).

b 10. **ἄλλο τι,** "something distinct," i.e. from the two or more *ἴδια* with which it is conjoined and from other *κοινά*.

CHAPTER II.

425 b 12—25. The consciousness which accompanies sensation must be referred to sense itself. For example, we perceive that we see. Is this by sight or by some other sense? On the latter assumption, the subsidiary sense will have a double object, not only sight which it is introduced to perceive, but also colour, the object of sight. Hence, unless we are driven back upon the other alternative that sight sees itself, there will be two senses dealing with the same object, colour, viz. sight and the subsidiary sense. Again, there is another objection to assuming a subsidiary sense. One subsidiary sense necessitates another to perceive it, and so on. Thus either the series of such subsidiary senses will be infinite, or there will be a halt when we come to a sense which has no other beyond it to perceive it in action, and, if so, we had better stop at sight itself [§ 1]. But here there is a difficulty. From the proposition "it is by sight that we perceive that we see" in its equivalent form "by sight we shall perceive that which sees," does it not follow that that which sees, as being the object of sight, must have colour? This difficulty may be met by the consideration that "to perceive by sight" has more than one meaning [§ 2], as when we

discriminate darkness and light, and by the further consideration that in perception the form is received without the matter, so that in a qualified sense that which sees may be said to have colour when it receives the form of colour; and for the same reason sensations and memory impressions remain in the organs of sense after the object of sense has been removed [§ 3].

With this passage should be compared *De Somno* 2, 455 a 12 ἐπεὶ δ' ὑπάρχει καθ' ἑκάστην αἴσθησιν τὸ μέν τι ἴδιον τὸ δέ τι κοινόν, ἴδιον μὲν οἷον τῇ ὄψει τὸ ὁρᾶν, τῇ δ' ἀκοῇ τὸ ἀκούειν, καὶ ταῖς ἄλλαις ἑκάστῃ κατὰ τὸν αὐτὸν τρόπον, ἔστι δέ τις καὶ κοινὴ δύναμις ἀκολουθοῦσα πάσαις, ᾗ καὶ ὅτι ὁρᾷ καὶ ἀκούει αἰσθάνεται, "in each particular sense, besides something special to it, there is a common element as well. The special element is, in sight, seeing, in hearing, the act of hearing, and so with the other senses severally. But there is also a common faculty accompanying them all, whereby we perceive that we see and hear." Here we have an explicit positive answer to the question raised but not properly answered in the present chapter, namely how we perceive that we see and hear. It is in virtue of a common faculty accompanying all the special senses, just as 425 b 5 sq., 8 sq. the common sensibles were described as accompanying the objects of the special senses. It cannot then be doubted that this **κοινὴ δύναμις ἀκολουθοῦσα πάσαις** (cf. *De Somno*) is precisely the common sensibility, *αἴσθησις κοινή*, of 425 a 27. The entire passage reminds us of the discussion in Plato, *Charmides* 167 sqq. There the conception of a science of science is examined, a conception which in the course of the argument is shown to be impossible, and useless, if possible. Among the examples adduced to prove the impossibility we find the senses of sight and hearing. A sight which sees itself or a hearing which hears itself will be regarded as incredible by some, though not, Plato is careful to add, by others. Sight, if it sees itself, must be coloured, for sight cannot see that which has no colour, which is precisely the difficulty of 425 b 17 sqq., and similarly for hearing: if hearing hears itself, it must hear a voice, for there is no other way of hearing, which reminds us of 426 a 15 sqq., a 27 sqq.

b 12. **αἰσθανόμεθα.** The fact which this word expresses is that we are conscious that we see and hear. Such consciousness is regarded by A. as in itself a sense-perception attendant on the original perception of the colour seen or the sound heard. To denote this Alex. Aphr. regularly employs the compound *συν-αισθάνεσθαι*, which in Aristotle and Eudemus is rarely found and never in precisely this sense, unless it be *Eth. Nic.* 1170 b 4 (see Stewart *ad loc.*). But the simple verb *αἰσθάνεσθαι* is used to mean the consciousness which attends on all activities in *Eth. Nic.* 1170 a 25 εἰ δ' αὐτὸ τὸ ζῆν ἀγαθὸν καὶ ἡδύ,...(a 29) ὁ δ' ὁρῶν ὅτι ὁρᾷ αἰσθάνεται καὶ ὁ ἀκούων ὅτι ἀκούει καὶ ὁ βαδίζων ὅτι βαδίζει, καὶ ἐπὶ τῶν ἄλλων ὁμοίως ἔστι τι τὸ αἰσθανόμενον ὅτι ἐνεργοῦμεν, ὥστε ἂν αἰσθανώμεθ' [int. αἰσθανόμεθα] ὅτι αἰσθανόμεθα, κἂν νοῶμεν, ὅτι νοοῦμεν, τὸ δ' ὅτι αἰσθανόμεθα ἢ νοοῦμεν, ὅτι ἐσμέν (τὸ γὰρ εἶναι ἦν αἰσθάνεσθαι ἢ νοεῖν), τὸ δ' αἰσθάνεσθαι ὅτι ζῇ, τῶν ἡδέων καθ' αὐτό (φύσει γὰρ ἀγαθὸν ζωή, τὸ δ' ἀγαθὸν ὑπάρχον ἐν ἑαυτῷ αἰσθάνεσθαι ἡδύ). Cf. *De Sensu* 7, 449 a 8 ἀνάγκη ἄρα ἕν τι εἶναι τῆς ψυχῆς, ᾧ ἅπαντα αἰσθάνεται.

b 13. **αἰσθάνεσθαι.** The subject to be supplied is **τὸ** (or **τὸν**) **αἰσθανόμενον**: see *note* on 403 a 22, ὀργίζηται, and cf. *Eth. Nic.* 1170 a 31 τὸ αἰσθανόμενον ὅτι ἐνεργοῦμεν cited in last *note*. **ἢ ἑτέρᾳ**, int. *αἰσθήσει*, a sense distinct from sight. Obviously, if sight does not fulfil the required conditions, still less can hearing or any other special sense perceive sight. Thus the old hypothesis of a sixth sense, rejected in the last chapter, reappears in a new form to be again refuted: and this view of the passage is confirmed by the more explicit problem in *De Somno*. A. leaves out of account the alternative that it is not by sense at all that we are conscious of seeing, hearing etc. Cf. *De Somno* 2, 455 a 15 ἔστι

δέ τις καὶ κοινὴ δύναμις ἀκολουθοῦσα πάσαις [int. ταῖς αἰσθήσεσιν] ᾗ καὶ ὅτι ὁρᾷ καὶ ἀκούει αἰσθάνεται. οὐ γὰρ δὴ τῇ γε ὄψει ὁρᾷ ὅτι ὁρᾷ, καὶ κρίνει δὴ καὶ δύναται κρίνειν ὅτι ἕτερα τὰ γλυκέα τῶν λευκῶν, οὔτε γεύσει οὔτε ὄψει οὔτ' ἀμφοῖν, ἀλλά τινι κοινῷ μορίῳ τῶν αἰσθητηρίων πάντων. Here there is not the least suggestion that sense is inadequate (cf. 426 b 14 sq.): ὁρᾷ ὅτι ὁρᾷ, not indeed by sight, but by the κοινὴ δύναμις, employing κοινόν τι τῶν αἰσθητηρίων πάντων.

b 13. **ἀλλ' ἡ αὐτὴ ἔσται.** But sight and its object colour must be objects of the same sense and therefore, if we adopt the alternative ἢ ἑτέρᾳ, we shall have two senses perceiving colour, (1) sight perceiving it directly and (2) ἑτέρα, ἡ αἰσθανομένη ὅτι ὁρᾷ, the hypothetical sense which, while perceiving sight directly, indirectly perceives colour; while if with A. we reject this conclusion as absurd, we are driven to the other alternative (τῇ ὄψει), and thus we have a sense perceiving itself; cf. 425 b 19 ὄψεταί τις τὸ ὁρῶν. A. assumes that the sense which perceives sensation must perceive the object of sensation, τὸ αἰσθητόν: cf. Them. 83, 15 H., 153, 17 Sp. οὐ γὰρ οἷόν τε ἀποφήνασθαι περὶ τῆς ὄψεως ὅτι ὁρᾷ μὴ γινώσκουσαν τὸ ὁρώμενον. But is this assumption self-evident? It is so only within the narrow limits laid down 418 a 14—16, according to which colour alone is the object, ἴδιον αἰσθητόν, of seeing.

b 14. **τοῦ ὑποκειμένου χρώματος**, the colour which is the subject or subject-matter of vision. The same mode of speech occurs below 426 b 8 ἑκάστη μὲν οὖν αἴσθησις τοῦ ὑποκειμένου αἰσθητοῦ ἐστίν. This is one way of expressing the relation between psychical processes or operations (ἔργα καὶ πράξεις) and what are called 402 b 15 ἀντικείμενα, corresponding or correlative objects. The application of the terms "subject" and "object" to denote the antithesis between "that which perceives" and "that which is perceived," between "that which knows" and "that which is known," is, of course, un-Aristotelian and in fact quite modern. The antithesis itself is familiar enough to A. and is expressed in various ways, e.g. by τὸ αἰσθητικὸν and τὸ αἰσθητόν, τὸ νοητικὸν and τὸ νοητόν. Here τὸ αἰσθητὸν is described, relatively to the sense-faculty which apprehends it, as τὸ ὑποκείμενον, that which falls under its ken, that which is its province, "its subject" (*subiectum*). The same αἰσθητόν, regarded as "set over against," logically contrasted with, the percipient faculty or operation, is called ἀντικείμενον (*obiectum*).

b 14. **ἢ δύο**, int. αἰσθήσεις. **τοῦ αὐτοῦ**, int. αἰσθητοῦ, e.g. in the case of sight τοῦ ὑποκειμένου χρώματος.

b 15. **ἢ αὐτὴ αὑτῆς**, int. αἴσθησις ἔσται. This is a generalisation of the first of the two alternative hypotheses, viz. that it is by sight (τῇ ὄψει) that we perceive that we see. As against the second alternative, ἑτέρᾳ, it commends itself to A.: but, as he points out, it is not free from difficulties; and, if stated in the crude form τῇ ὄψει ὁρᾷ ὅτι ὁρᾷ, is untenable, as he says in *De Somno* l.c., 455 a 17 sq. οὐ γὰρ δὴ τῇ γε ὄψει ὁρᾷ ὅτι ὁρᾷ. It is accordingly there superseded by the more explicit solution cited above. I may remark parenthetically that it is of course not in the same way that we should interpret such passages as 417 a 2—4, *Metaph.* 1010 b 35—37, where A. denies that αἴσθησις can be of itself or have no external thing, but simply itself, for its object. Cf. *Metaph.* 1074 b 35 sq. **ἔτι δ' εἰ καὶ.** A further argument against the hypothesis that consciousness of sight, hearing etc. is by a separate special sense (ἑτέρᾳ).

b 16. **ἢ εἰς ἄπειρον εἶσιν.** To explain the consciousness of the second, we shall require a third sense, and similarly a fourth to explain the consciousness of the third, and so on ad infinitum. Such infinite regress is always assumed by A. to be in actuality impossible; cf. *note* on 411 b 13. Mr Shorey (*A. J. Ph.* XXII. 154 sq.) adduces a similar case in Plato, *Theaetet.* 200 C, where also the

inference is drawn that it is better to accept the paradox at the beginning of the series than later, if an infinite regress is our only way of escape from it. **ἢ αὐτή τις ἔσται αὑτῆς.** Some one or other of the series of subsidiary faculties will have to be self-perceiving. Sooner or later we shall have to do what might just as well, therefore, be done at first, viz. admit a self-perceiving faculty. M. Rodier's rendering "ce second sens devra se sentir lui-même" apparently overlooks τις. Cf. Innes, *Cl. Rev.* XVI. 462: "the necessary alternative to the continuation of the series is not that the second of the series but that some one of the series should be its own object."

b 17. ἐπὶ τῆς πρώτης, int. αἰσθήσεως. **τοῦτο ποιητέον,** i.e. λεκτέον ὅτι αὐτὴ ἑαυτῆς αἴσθησις ἔσται.

b 17 εἰ γὰρ τὸ τῇ ὄψει...18 τὸ ἔχον, i.e. granting, as has been assumed throughout the treatise, (*a*) that perceiving by sight is seeing, and (*b*) that what is seen is always "colour" or "the coloured" (the coloured thing, of course, *quâ* coloured: cf. 424 a 21—24 and contrast 418 a 23 sq.).

b 19. εἰ ὄψεταί τις τὸ ὁρῶν. The stress is on the accusative τὸ ὁρῶν: "if that which you are to see is something which itself sees." This hypothesis merely draws out what is implicit in the alternative αὐτὴ αὑτῆς (αἴσθησις ἔσται). It is quite possible that with τις should be supplied αἴσθησις, and this would agree with b 16 above; but even then, in view of the general principle enunciated 408 b 13 sqq., we cannot be far wrong in translating as if τις were the indefinite pronoun. **τὸ ὁρῶν πρῶτον,** "that which primarily or directly sees." By πρῶτον it is implied (see *note* on 422 b 22) that organ and object have been brought at once into communication. The primary organ of any sense is that in which primarily resides the faculty (424 a 24 sq.) of receiving sensible forms without their matter. The difficulty is that, according to 418 b 26 sq., "it is that which is colourless which is receptive of colour." Which view are we to take: is it colourless or coloured? And is it the eye or a central sense-organ which is τὸ ὁρῶν πρῶτον and is in direct communication with the object?

b 20. φανερὸν τοίνυν. The difficulty can be met partly by enlarging the meaning of τῇ ὄψει αἰσθάνεσθαι, to perceive by sight, partly by explaining that in a certain qualified way the seeing faculty may be said to have colour inasmuch as it receives the form, though not the matter, of colour.

b 20. ὅτι οὐχ ἕν. We might have expected ὅτι πολλαχῶς λέγεται, i.e. perceiving by sight has more senses than one and therefore is an ambiguous phrase: οὐχ ἕν (ἐστι) stands to the more usual οὐχ ἁπλῶς (or πλεοναχῶς) λέγεται (cf. 426 a 26 ἁπλῶς ἔλεγον) as διττόν ἐστι stands to διττῶς λέγεται (cf. διττὸν γὰρ ἡ ἀκοή, καὶ διττὸν ὁ ψόφος 426 a 7 sq., *Metaph.* 1069 b 15 διττὸν τὸ ὄν, *Pol.* 1342 a 18 ὁ θεατὴς διττός, *ib.* 1261 b 28 τὸ γὰρ πάντες καὶ ἀμφότερα καὶ περιττὰ καὶ ἄρτια διὰ τὸ διττὸν καὶ ἐν τοῖς λόγοις ἐριστικοὺς ποιεῖ συλλογισμούς).

b 22. οὐχ ὡσαύτως. If seeing were always the apprehension of colours or coloured objects (τὸ ὁρᾶν χρωμάτων ἐστὶν ἀντίληψις, Philop. 463, 38 sq.), it might include perception of light, which is in a manner the colour of the transparent medium (418 b 11). To discern light would be to see the illuminated air. But to discern darkness is to try to see either colour or light and to be conscious of failure: darkness, at any rate, has no colour, 418 b 28 sq., and we do not discern it in the same way as we discern light. A. is probably thinking, not so much of absolute darkness, as of perception of light or darkness in twilight, when colours cannot be seen. Cf. 422 a 20 (τὸ γὰρ σκότος ἀόρατον, κρίνει δὲ καὶ τοῦτο ἡ ὄψις), ἔτι τοῦ λίαν λαμπροῦ (καὶ γὰρ τοῦτο ἀόρατον, ἄλλον δὲ τρόπον τοῦ σκότους), where ἄλλον τρόπον suggests that ὡσαύτως in our passage discriminates the perception of darkness from the perception of light, rather than from the perception of colours.

b 23. **δεκτικόν.** What is here said of the sense-organ is said 424 a 18 of sense, the *λόγος* or *δύναμις* of the organ.

b 24. **ἕκαστον**, "every sense-organ" and therefore the eye. See *note* on **ἑκάστου**, 424 a 22. **διὸ**, because we receive the form without the matter. To receive this immaterial form in actual sensation is to undergo some change, *ἀλλοιοῦσθαί πως*, and, when *ἀλλοίωσις* has once taken place, the organ does not at once lose the modification which the sensation produced in it. **ἀπελθόντων**, when the external object has ceased to stimulate the sense. Cf. *De Insomn.* 2, 459 a 24 *τὰ γὰρ αἰσθητὰ καθ' ἕκαστον αἰσθητήριον ἡμῖν ἐμποιοῦσιν αἴσθησιν, καὶ τὸ γινόμενον ὑπ' αὐτῶν πάθος οὐ μόνον ἐνυπάρχει ἐν τοῖς αἰσθητηρίοις ἐνεργουσῶν τῶν αἰσθήσεων, ἀλλὰ καὶ ἀπελθουσῶν*, *De Mem.* 1, 450 a 26 *τοῦ πράγματος ἀπόντος*, *Metaph.* 1036 a 6 *ἀπελθόντες ἐκ τῆς ἐντελεχείας*, also 408 b 18, *De Mem.* 1, 450 a 30—32.

b 24. **ἔνεισιν αἱ αἰσθήσεις καὶ φαντασίαι**: cf. *De Insomn.* 2, 459 b 5 *διὸ τὸ πάθος ἐστὶν οὐ μόνον ἐν αἰσθανομένοις τοῖς αἰσθητηρίοις, ἀλλὰ καὶ ἐν πεπαυμένοις, καὶ ἐν βάθει καὶ ἐπιπολῆς*, not only in the peripheral organs "at the surface," but deep down in the central organ. Cf. also *De Insomn.* 2, 460 b 2 *ἀπελθόντος τοῦ θύραθεν αἰσθητοῦ ἐμμένει τὰ αἰσθήματα αἰσθητὰ ὄντα.* Since sensations are movements (not *φοραί*, but *ἀλλοιώσεις*, 408 b 10 sq.), it is not inconceivable that they should in turn set up other movements, cf. 428 b 10 sqq. Such are imaginings and memories: cf. *De Mem.* 1, 450 a 25—32. See *note* on 408 b 18, **μόνας.** On the plural *φαντασίαι* = *φαντάσματα* see ad 420 b 32.

425 b 26—426 b 7. In actual sensation the sense and its object, e.g. hearing and sound heard, are identical, though logically we can distinguish the one from the other in thought and give them different names, e.g. audition and resonance [§ 4]. The action of the agent, as well as the passivity of the patient, resides in the patient. Sound being such an agent and hearing such a patient, it will be in the sense of hearing, or in that which has the power to hear, that not only audition but also actual sound or resonance is realised [§ 5]. But the actualities as distinct from the potentialities are often without a name: e.g. there are no terms to distinguish colour and flavour actually seen and tasted from the corresponding potentialities [§ 6]. Actual sensation and the sensible object in actuality (e.g. actual hearing and actual sound) are maintained and destroyed simultaneously, but such simultaneous co-existence is not necessary for potential sensation and the potential sensible [§ 7]. This qualification was overlooked by the earlier physicists when they committed themselves to the assertion that colour does not exist apart from seeing nor flavour apart from tasting: I mean, they failed to distinguish between actual and potential sensation and sensible [§ 8]. The sense must be a proportion when its object is so. This explains the fact that excess in the sensible object destroys the sense. Objects pure and unmixed do indeed give pleasure, but the pleasure is heightened when the object is not simple, but a mixture in which opposite ingredients are blended. The sense being the due proportion, excess in the sensible causes pain, when it does not destroy [§ 9].

425 b 26 **ἡ δὲ τοῦ αἰσθητοῦ...27 αὐταῖς.** See *notes* on 424 a 24 *κατὰ τὸν λόγον*, on 424 a 25 *τὸ δ' εἶναι ἕτερον*, and for *τὸ εἶναι* with dative 408 a 25, end of *note.* The actively operant sensible is identical with the actively operant sense at the moment of perception. Later in this book we hear that actual knowledge is identical with the thing actually known at the moment of cognition; cf. 430 a 19 sq., 431 a 1. This identity of subject and object in the act of cognition, whether perception or knowledge, is stated with qualifications which deserve careful attention. Sense-perception may be actual or potential, 417 a 10:

cf. 431 b 24—26. It is only actual or actively operant sense which is identical with its object. The sensible, again, may be either an actual or only a potential sensible; we are dealing with the former only. The question what is sense when not percipient and what is the sensible when not perceived does not concern us. Lastly, though τῷ ὑποκειμένῳ ἕν, one and the same in material substratum, *materialiter*, percipient sense and perceived sensible are in essence or notion distinct. We can analyse this one thing and distinguish in thought its two characters or aspects. They differ as the ratio 2 : 1 differs from the ratio 1 : 2 or as up hill differs from down hill, *Phys.* III. 3, 202 a 18 sqq. For this qualified identity of subject and object in actual perception, the way has been prepared by the assimilation which was so marked a feature of the account of the separate senses, e.g. 418 a 3 τὸ δ' αἰσθητικὸν δυνάμει ἐστὶν οἷον τὸ αἰσθητὸν ἤδη ἐντελεχείᾳ, καθάπερ εἴρηται. πάσχει μὲν οὖν οὐχ ὅμοιον ὄν, πεπονθὸς δ' ὡμοίωται καὶ ἔστιν οἷον ἐκεῖνο: cf. 422 b 15 ὥστε τὸ γευστικόν ἐστι τὸ δυνάμει τοιοῦτον, γευστὸν δὲ τὸ ποιητικὸν ἐντελεχείᾳ αὐτοῦ: further, by the account of perception given in 424 a 17 sqq. Objects of sense, colours, sounds and smells, there are no doubt in abundance, but unless actually perceived they are only potential objects of sense, whatever else they may be actually.

b 27. **λέγω δ' οἷον,** "I mean, for example." It might have been expected that λέγω would influence the construction, but οἷον is followed by the nominative, just as if λέγω had not preceded.

b 28. **ἔστι,** "it is possible" = ἐνδέχεται.

b 29. **τὸ ἔχον ψόφον,** i.e. τὸ δυνάμενον ψοφεῖν of the next line. See *note* on ἔχειν ψόφον, 419 b 6. **οὐκ ἀεὶ ψοφεῖ,** int. κατ' ἐνέργειαν. Cf. 419 b 4 sq., and 426 a 8 *infra*.

b 29. **ὅταν δ' ἐνεργῇ.** The transition from dormant power to its actual exercise must be treated as equivalent to πάσχειν or κινεῖσθαι, 417 a 14 sqq. The sense is stimulated and acted upon by the object, but, as there explained, this does not mean destruction by the opposite, but rather preservation of the potentially existent and its normal development: εἰς αὑτὸ γὰρ ἡ ἐπίδοσις καὶ εἰς ἐντελέχειαν, 417 b 6. The external stimulus is the occasion of a development from dormant potentiality to active exercise, 431 a 4 sqq.

b 30. **τότε,** at the moment of actual operation, ὅταν ἐνεργῇ. There is an error in the critical *notes* upon this line. According to Stapfer, *Studia*, p. 7, *Krit. Studien*, p. 19, *n.*, the lacuna in cod. E is longer by the two words καὶ ὁ than Bekker has reported. The note should have run: "τότε...31. καὶ ὁ om. E." Stapfer adds: "partim insert., partim in marg. posit. ab E[3]."

b 31. **ἅμα γίνεται.** Here only the simultaneity of the two processes is mentioned; their identity, subject to the proper qualifications, follows from the fact that, as explained below, 426 a 4 sq., they both take effect ἐν τῷ πάσχοντι.

426 a 2. **εἰ δή...ἐν τῷ ποιουμένῳ,** "assuming, therefore, that moving, or rather acting and being acted upon, go on in that which is undergoing the action." From *Phys.* III., c. 3, we learn that κίνησις takes effect ἐν τῷ κινουμένῳ. As he is dealing with sense-perception, which he sometimes calls a κίνησις but regularly a πάθος, A. not only adds (426 a 2) καὶ ἡ ποίησις to κίνησις, but even takes the unusual step of substituting ἐν τῷ ποιουμένῳ for ἐν τῷ κινουμένῳ when we should have expected ἐν τῷ πάσχοντι, cf. 426 a 5, 10 and 414 a 11 ἐν τῷ πάσχοντι καὶ διατιθεμένῳ. The passage in the *Physics* is III. 3, 202 a 13 καὶ τὸ ἀπορούμενον δὲ φανερόν, ὅτι ἐστὶν ἡ κίνησις ἐν τῷ κινητῷ· ἐντελέχεια γάρ ἐστι τούτου ὑπὸ τοῦ κινητικοῦ. καὶ ἡ τοῦ κινητικοῦ δὲ ἐνέργεια οὐκ ἄλλη ἐστίν· δεῖ μὲν γὰρ εἶναι ἐντελέχειαν ἀμφοῖν· κινητικὸν μὲν γάρ ἐστι τῷ δύνασθαι, κινοῦν δὲ τῷ ἐνεργεῖν· ἀλλ' ἔστιν ἐνεργητικὸν τοῦ κινητοῦ, ὥστε ὁμοίως μία ἡ ἀμφοῖν ἐνέργεια ὥσπερ τὸ

αὐτὸ διάστημα ἓν πρὸς δύο καὶ δύο πρὸς ἕν, καὶ τὸ ἄναντες καὶ τὸ κάταντες· ταῦτα γὰρ ἓν μέν ἐστιν, ὁ μέντοι λόγος οὐχ εἷς. Cf. also *Phys.* V. 1, 224 b 4 sqq., b 25 *ἡ κίνησις οὐκ ἐν τῷ εἴδει ἀλλ' ἐν τῷ κινουμένῳ καὶ κινητῷ κατ' ἐνέργειαν.* Also *De Gen. et Corr.* I. 7, 324 b 5 sqq.; cf. *Phys.* VIII. 3. In our passage A., having joined *ποίησις* with *κίνησις*, goes on to add *ἐν τῷ ποιουμένῳ* for all three, whereas strictly *ἡ ποίησις* is *ἐν τῷ ποιουμένῳ*, just as *ἡ κίνησις* is *ἐν τῷ κινουμένῳ* and as *τὸ πάθος* is *ἐν τῷ πάσχοντι*. That the present passive participle *ποιούμενον* was not displaced by *πάσχον* is attested by *Metaph.* 1050 a 31 *τούτων μὲν ἡ ἐνέργεια ἐν τῷ ποιουμένῳ ἐστίν*, *Phys.* II. 1, 192 b 27 *ἕκαστον τῶν ποιουμένων*, *ib.* II. 3, 194 b 31 *καὶ ὅλως τὸ ποιοῦν τοῦ ποιουμένου καὶ τὸ μεταβάλλον τοῦ μεταβαλλομένου* [int. *αἴτιον*], *De Gen. An.* II. 6, 742 a 30 *τὸ γὰρ ποιητικὸν καὶ γεννητικόν, ᾗ τοιαῦτα, πρὸς τὸ ποιούμενόν ἐστι καὶ γεννώμενον.*

a 4. **ἐν τῇ κατὰ δύναμιν**, int. *ἀκοῇ* which corresponds in this instance to *τὸ πάσχον*. Potential hearing must have that hearing actualised and the sound must take effect in it. **τοῦ ποιητικοῦ καὶ κινητικοῦ.** It would not be safe to infer that the terms *ποιητικὸν* and *κινητικὸν* are identical: sometimes *κίνησις* is regarded as more extensive than *ποίησις*, e.g. *De Gen. et Corr.* I. 6, 323 a 20 *τὸ κινεῖν ἐπὶ πλέον τοῦ ποιεῖν ἐστίν.*

a 5. **διὸ οὐκ ἀνάγκη τὸ κινοῦν κινεῖσθαι.** Hence there may be a cause of motion which is itself unmoved, and such a cause for the motion of the whole universe we accordingly find described in *Metaph.* Λ., cc. 6, 7. There are other applications, e.g. the good as the end of action, *De A.* 433 b 15 sq.: cf. 434 a 16 sqq.

a 6. **ἡ μὲν οὖν τοῦ ψοφητικοῦ ἐνέργειά ἐστι ψόφος.** This sentence applies to the special case of sound and hearing, the principle enunciated 426 a 4 of action taking effect in that which is being acted upon: *ποιητικὸν* becomes *ψοφητικόν*, *τὸ πάσχον* becomes *τὸ ἀκουστικόν*. It has been proposed to separate the sentence from *διὸ οὐκ ἀνάγκη τὸ κινοῦν κινεῖσθαι* by transposing a 9 *ὥσπερ γὰρ ἡ ποίησις...* a 11 *ἐν τῷ αἰσθητικῷ* to precede it. The objection to this is that the subject of a 12 *ὠνόμασται* is left obscure, for the verb is separated from its natural subject *ἡ τοῦ αἰσθητοῦ ἐνέργεια καὶ ἡ τοῦ αἰσθητικοῦ* by the interposition of three sentences, which, if the transposition be adopted, must be regarded as a sort of parenthesis.

a 7. **διττόν**, namely, potential and actual: see 419 b 4 sq. cited above, *note* on 425 b 29, *οὐκ ἀεὶ ψοφεῖ.*

a 11. **ἐν τῷ αἰσθητικῷ.** This is a more general expression for *ἐν τῷ πάσχοντι* than *ἐν τῇ κατὰ δύναμιν*, which is used of *ἀκοὴ* 426 a 4.

a 13. **ὅρασις γὰρ λέγεται.** See the last *note* on 412 a 8.

a 14. **καὶ γεῦσις**, int. *ἐνέργεια λέγεται.*

a 15. **ἡ δὲ τοῦ χυμοῦ**, int. *ἐνέργειά ἐστιν.*

a 17. **ἅμα φθείρεσθαι καὶ σώζεσθαι**, "must be simultaneously destroyed or simultaneously maintained." They exist and cease to exist as actuality together. **τὴν οὕτω λεγομένην**, i.e. *τὴν κατ' ἐνέργειαν λεγομένην*, in contrast to *τὰ κατὰ δύναμιν λεγόμενα* 426 a 19.

a 19. **οὐκ ἀνάγκη**, int. *ἅμα φθείρεσθαι καὶ σώζεσθαι.*

a 20. **οἱ πρότερον φυσιολόγοι.** The assertion of the relativity of sensation, or at any rate the denial of its objective validity, was a consequence of more than one Pre-Socratic system, but it is uncertain how far the constructors of such systems recognised this. Cf. *Metaph.* Γ, c. 5, where A. has before him not only the views of Empedocles, Anaxagoras and Democritus, but also the maxim of Protagoras, which may be regarded as the outcome or result of previous physical speculation. See Plato, *Theaet.* 156 A—C, 159 C, D, Aristotle, *De Sensu*

[illegible] sqq., *Metaph.* [illegible] especially 1009 [illegible]—1011 [illegible] cf. also [illegible] 404 [illegible] Theophrastus *De Sensibus* [illegible] By the term [illegible] the earlier [illegible] philosophers are often intended, e.g. *Metaph.* 986 [illegible] but Empedocles is so designated *Poetic.* 1447 [illegible] 19 [illegible] Protagoras, though he was a professed humanist and not a natural philosopher, it seems reasonable to accept Trend.'s explanation: "Quoniam autem ut ita quidem et Heracliti placita in suum usum convertit haud inepte cum aliis physiologis dici potest" (ed. 2 p. 358).

§ 21. [illegible] Cf. *De Gen. et Corr.* [illegible] 315 b 33 [illegible] [illegible] [illegible] [illegible] [illegible] Cf. Theophr. *De Sensibus* § 69 [illegible] [shape of the atoms] [illegible] [illegible] [of Democritus]. In § 64 Theophr. implies that it was only the atomic shapes which generate colour and flavour, which Democritus determined accurately [illegible] [illegible] [illegible] [making the presentation to sense, viz. as flavour, relative to the individual percipient]. See also *Metaph.* 1047 a 4 [illegible] [illegible] [illegible], where A. endeavours to fasten upon the Megarians the doctrine of Protagoras, just because they held [illegible] and denied the validity of any distinction between the potential and the actual, between a power to do and the act of doing.

§ 24. [illegible], i.e. [illegible] [illegible].

§ 25. [illegible], "but it does not hold of potential sensation and potential sensible."

§ 26. [illegible] A. means τὸ αἰσθητικόν and τὸ αἰσθητόν. When we speak of these two things, it is necessary, A. thinks, to indicate in each case whether the term we use refers to τὸ κατ' ἐνέργειαν or to τὸ δυνάμει. Cf. *Metaph.* 988 b 14 [illegible] [illegible].

The general drift of the following section (426 a 27—b 7) is clear and may be presented in the paraphrase of Them., who characteristically passes over certain expressions which occasion great difficulty. "If the actual audible is identical with the actual hearing, then the sensations were rightly said to be λόγοι. For the mixed among sensibles are always more pleasant to us than the unmixed, e.g. in sounds αἱ συμφωνίαι, mixed flavours and blended colours. Now every mixture and blending is a λόγος which, when actually perceptible, becomes identical with sense-perception. Rightly and naturally (εἰκότως), then, sense-perception is λόγος as being identical with a λόγος (λόγῳ γὰρ ἡ αὐτή): untempered sounds and unmixed flavours, whether in excess or in defect, either fail to move sense or else destroy or pain it, for in excess they are no longer λόγοι nor blendings (κράσεις) nor συμφωνίαι" (84, 24 sqq. H., 155, 26 sqq. Sp.). Thus, as before, A. takes hearing as his typical sense and from the admitted proposition λόγος δ' ἡ συμφωνία, he concludes that hearing is a λόγος (426 a 29 ἀνάγκη καὶ τὴν ἀκοὴν λόγον τινὰ εἶναι), and, by induction, that every actual sensation is similarly a λόγος (b 3 ὡς λόγου τινὸς ὄντος τῆς αἰσθήσεως): and this is seen to be in complete agreement with the acknowledged fact that sensibles in excess destroy or pain the sense, while when duly tempered they are not only perceived but

give pleasure. It will be remembered that in *Eth. Nic.* 1174 b 14—1175 a 3 A. lays down that pleasure is the inseparable accompaniment of actual sensation when the faculty of sense is functioning normally upon its proper object, the appropriate sensible.

a 27. εἰ δὴ συμφωνία φωνή τίς ἐστιν. The text in this form is as old as the fifth century A.D. The evidence of Simpl. is explicit, 193, 32—194, 3; 194, 9. He informs us that Plutarch of Athens enquired whether ΕΙΔΗ should be read as three words, εἰ δ' ἡ, or as two, εἰ δή, and decided for the latter division of the letters. The same possibility of dividing ΔΗ into δ' ἡ is also considered and rejected by Philop. 475, 29 sqq., doubtless upon authority, though he does not name Plutarch. The objections of Syrianus and Ammonius as cited by Philop. 473, 2 sqq., 10 sqq. also imply that they had substantially the same text. Simpl. and Philop. agree that συμφωνία is predicate and therefore does not need the article and that φωνή τις (or, as they put it, ἡ τὶς φωνή) is the subject and means actual voice: Simpl. 194, 8 τὴν συμφωνίαν καλῶς κατηγορεῖ τῆς τινὸς φωνῆς, τουτέστι τῆς κατ' ἐνέργειαν, Philop. 475, 30 τὶς δέ ἐστιν ἥτις φωνή, δηλονότι ἡ κατ' ἐνέργειαν· αὕτη γάρ ἐστιν ἡ συμμέτρως ἔχουσα πρὸς τὴν κατ' ἐνέργειαν ἀκοήν. Trend., however, conjectured εἰ δ' ἡ φωνὴ συμφωνία τίς ἐστιν and this has been thought to derive support from Soph. 112, 32 and Priscianus Lydus 22, 24 cited in the critical *notes*. But, as Priscianus does not add τις to συμφωνία, his evidence is inconclusive. Philop. or Simpl., interpreting our present text as we know they did, would have thought themselves equally justified in saying ἡ φωνὴ συμφωνία εἴρηται παρὰ τῷ Ἀριστοτέλει.

Now, for the sake of argument, suppose we take the words in this way, "actual voice is a συμφωνία": our greatest difficulty is then to conceive exactly what is meant by συμφωνία. The word (1) may mean literally a concord of two or more sounds heard as one sound, or (2) it may have a wider meaning, in which it is scarcely to be distinguished from ἁρμονία or ὁμοιότης (cf. Plato, *Rep.* 401 D, *Symp.* 187 B), as agreement, tempering, harmony, of opposites, or at any rate contrasts, in general, and not specifically of sounds. With the first meaning it is clear that συμφωνία is φωνή τις and not conversely. To take the specific meaning (1) with φωνή as subject is absurd: it is not true that all actual voice is a concord in which two or more sounds are blended: some actual voice is, some is not. The ancient commentators, then, who insist that φωνή is the subject, give συμφωνία the more general meaning (2). Thus Simpl. 194, 16 τὸ κατ' ἐνέργειαν αἰσθητὸν ἐν συμφωνίᾳ τινὶ εἶναι βούλεται τῶν ἄκρων, ὥστε μήτε ἐλλείπειν μήτε ὑπερβάλλειν, ἔχειν δὲ μέσως πως· τοῦτο γὰρ ἡ συμφωνία, οἷον κρᾶσίς τις οὖσα τῶν ἄκρων, ὀξέος μὲν καὶ βαρέος ἐν ἀκοῇ, λαμπρότητος δὲ καὶ ἀμυδρότητος ἐν ὄψει: here συμφωνία seems to be very little different from μεσότης. Philop. again says 472, 30 συμφωνίαν δὲ τὴν κοινωνίαν λέγει and Soph. 112, 33 συμφωνία τις καὶ συμμετρία and Prisc. Lyd. 22, 25 ἡ φωνὴ καὶ ἡ ἀκοὴ συμφωνήσασαι καὶ συναρμοσθεῖσαι ἀλλήλαις. Again, if συμφωνία bears the second meaning of agreement in general, the question arises; agreement of what with what? Of the sense with the sensible, says Philop. 472, 29 ἡ δὲ φωνὴ συμφωνία ἐστὶν οὐκ αὐτὴ πρὸς ἑαυτὴν ἀλλὰ πρὸς τὴν ἀκοήν. Similarly Prisc. Lyd. in the passage cited above and also 22, 29 ἡ ἐπειδὴ οὐκ ἐνεργεῖ καθ' ἑαυτὴν ἀλλ' ἐν τῇ πρὸς τὰ ἔξω ἀποτάσει καὶ τῇ πρὸς τὰ αἰσθητὰ σχέσει, δῆλον ὡς οὐδὲ τὴν ἐνεργητικὴν ἕξει συμμετρίαν καθ' ἑαυτήν. Simplicius, on the other hand, as is shown in the passage cited, interpreted the agreement as one between the opposite extremes in the sensible, a view which is shared by Trend., who rejects the supposition that the word means "concentus inter vocem et auditum" and prefers to understand it as "concentus inter ipsa vocis quasi elementa, temperata quaedam acuti et gravis soni ratio, vocis

temperies." We may recall the treatment of the term ἁρμονία in I., c. 4, where, as A. explains it, it implies opposites, *σύνθεσις ἐναντίων* or *λόγος τῶν μειχθέντων*, i.e. *τῶν στοιχείων*. If we interpret *συμφωνία* here in an analogous manner as the combining of opposite elements, we avoid the absurdity of supposing that A. used the identity of sense and sensible as one of his premisses for establishing the conclusion that there is symmetry, agreement or consonance between them.

However, though *συμφωνία* might thus be taken as *κρᾶσις ἐναντίων* in general, the connexion with the sense of hearing and the repetition of the word below, b 6, incline me to adopt Torstrik's contention that the word has here its restricted meaning as a musical term. Cf. 424 a 31 *note*. As we there saw, *συμφωνία* is a sound which to the ear is a single object, although we know that in its production two or more actual sounds coalesce. It is thus a typical example of *μεῖξις* proper (see *note* on 407 b 32) and is so treated in *De Sensu* 7, 447 a 29—447 b 4, 447 b 11. A. does not believe that this coalescence is apparent only and that the two constituents of a chord are separately heard, although the interval between them is so short as to be imperceptible, *De Sensu* 7, 448 a 19 sqq. This was the theory of certain Pythagoreans, which A. rejects, because he regards an imperceptible moment of time as an impossibility. His own belief is that what is heard is neither of the constituent sounds, but a new single sound formed by their combination. Thus understood, it is quite evident that *συμφωνία* is a species of vocal sound. I take *συμφωνία* to be the subject, even without the article prefixed. Cf. e.g. 420 b 5 *ἡ φωνὴ* with 420 b 13 *φωνὴ* without the article. Torstrik admits that the conclusion of the syllogism does not follow from the premisses: and this cannot be denied. But no universal conclusion does follow from particular premisses.

a 28. καὶ ἔστιν ὡς οὐχ ἓν τὸ αὐτό. Torstrik bracketed these words as a marginal gloss. They are a needless interruption to the argument and the omission of *καὶ* between *ἓν* and *τὸ αὐτὸ* looks suspicious.

a 28. λόγος δ' ἡ συμφωνία, more precisely a *numerical* ratio. Cf. *Metaph.* 991 b 13 *εἰ δ' ὅτι λόγοι ἀριθμῶν τἀνταῦθα, οἷον ἡ συμφωνία*, 1092 b 13 *ἢ ὅτι* [*ὁ*] *λόγος ἡ συμφωνία ἀριθμῶν*, also *De A.* 424 a 30 *λύεται ὁ λόγος* (*τοῦτο δ' ἦν ἡ αἴσθησις*), *ὥσπερ καὶ ἡ συμφωνία καὶ ὁ τόνος κρουομένων σφόδρα τῶν χορδῶν*, *Probl.* XIX. 38, 921 a 2 *συμφωνίᾳ δὲ χαίρομεν ὅτι κρᾶσίς ἐστι λόγον ἐχόντων ἐναντίων πρὸς ἄλληλα. ὁ μὲν οὖν λόγος τάξις, ὃ ἦν φύσει ἡδύ. τὸ δὲ κεκραμένον τοῦ ἀκράτου πᾶν ἥδιον, ἄλλως τε κἂν* (*αἰσθητὸν ὂν*) *ἀμφοῖν τοῖν ἄκροιν ἐξ ἴσου τὴν δύναμιν ἔχῃ* (*sic* Jan) *ἐν τῇ συμφωνίᾳ ὁ λόγος*.

a 29. ἀνάγκη καὶ τὴν ἀκοὴν λόγον τινὰ εἶναι. This is A.'s conclusion from the threefold protasis (2) actual sound and actual hearing are one and the same, (1) *συμφωνία* is a kind of vocal sound and (3) *ἡ συμφωνία* is *λόγος*. This is the order of Simplicius. The steps might be arranged as follows: (1) *συμφωνία* is a kind of vocal sound, (3) *ἡ συμφωνία* is *λόγος*, therefore a certain vocal sound is *λόγος*, but (2) actual sound and actual hearing are identical: therefore actual hearing, like actual sound, is a sort of *λόγος*. But the inference is fallacious. Obviously the premisses with their qualifications *τὶς* and *ἔστιν ὡς* do not bear out the general conclusion. Nor, if we adopt Trend.'s conjecture, is the case much better, for even then *ἔστιν ὡς* should precede *ἀνάγκη* in the conclusion. When we actually hear a concord, then on A.'s theory of sensation the *λόγος* or ratio of the audible sound is transmitted to the percipient sense-organ, for it is only there that it resides in actuality. But this proves nothing for sensations other than those of musical chords. I conjecture that it was their recognition of the fallacy in A.'s reasoning here which led the commentators to such arbitrary interpretations of the passage.

a 30. **διὰ τοῦτο.** Cf. 424 a 28 *φανερὸν δ' ἐκ τούτων* sqq., where *φθείρουσι τὰ αἰσθητήρια* is parallel to *φθείρει τὴν ἀκοὴν* here. A lesion of the organ prevents it from functioning.

a 31. **ὁμοίως δὲ καὶ ἐν χυμοῖς τὴν γεῦσιν**: supply *φθείρει* as predicate and *τὸ ὑπερβάλλον γευστὸν* for subject.

426 b 3. **διὸ**, because the sense is in some sort a ratio or proportion, *λόγος τις*. **ἡδέα μέν**, int. *τὰ αἰσθητά ἐστιν*. The clause, which is answered by b 5 *ὅλως δὲ μᾶλλον κτέ.*, is concessive, as pointed out by Mr Shorey, *A. J. Ph.* XXII. p. 159. To the question what sensibles give pleasure A. answers (1) those which are pure and unmixed, under certain conditions; but (2) in a still higher degree those which are composite, when divers elements have been fused into a unity. Cf. *Probl.* XIX. 38, 921 a 2 sqq. cited in second *note* on a 28 *supra*.

b 4. **ἄγηται εἰς τὸν λόγον**, i.e. in actual perception. When unmixed sensibles are perceived, they are brought before the bar of sense (cf. *εἰς κρίσιν*, *εἰς δικαστήριον ἄγειν*), which pronounces on their purity. Sense is the *λόγος* here and *εἰς τὸν λόγον ἄγεσθαι* = *αἰσθητὰ γενέσθαι*. A. uses *ἄγειν* of the transition from potential to actual (e.g. 417 b 10, *Eth. Nic.* 1153 a 12, *De Sensu* 4, 441 b 21, *Metaph.* 1051 a 29 sq.), which in the moment of perception affects simultaneously the *αἰσθητικὸν* and the *αἰσθητόν*. The process has been often described from the side of the subject as *ὁμοίωσις*: here it is described from the side of the object. **τὸ ὀξὺ.** I am in doubt whether this word, which in our treatise is variously applied to the object of at least four of the five senses, hearing, smelling, taste and touch, ought to be taken, as in the rest of this section, to mean "shrill" or as "sharp to the taste," which better suits its association here with salt and sweet.

b 5. **ἡδέα γὰρ τότε**, i.e. when perceived as pure and unmixed. The commentators, however, persist in making this mean "when mixed in the proper proportion," which is the meaning they attach to *ὅταν ἄγηται εἰς τὸν λόγον*: Simpl. 195, 15 sqq., Philop. 477, 5 sqq. This destroys the antithesis to *τὸ μεικτόν*. Surely A. would have granted that it is possible to perceive qualities pure and unmixed and to derive pleasure from them. In *De Sensu*, cc. 3—5 he goes to great lengths in the analysis of *χρώματα*, *ὀσμαὶ* and *χυμοὶ* and with regard to these claims to have established the result that, as a rule, the greatest pleasure is derived from the composite sensibles.

b 5. **μᾶλλον**, int. *ἡδύ*. The only alternative is to make *συμφωνία* the predicate of *τὸ μεικτόν*, and this I reject, because *συμφωνία* is the typical example of *τὸ μεικτόν*. The omission of *οἷον*, *καθάπερ* or the like is not wholly unexampled; cf. e.g. 425 b 9. But *ἀκοῇ μὲν* before *συμφωνία* would correspond exactly to *ἁφῇ δὲ τὸ θερμαντὸν κτέ.* and must, I think, be mentally supplied.

b 6. **ἁφῇ δέ**, int. *μᾶλλον ἡδύ ἐστιν*. **τὸ θερμαντὸν ἢ ψυκτόν**, not the merely hot or cold, which, like *τὸ ὀξὺ ἢ τὸ βαρύ*, would be *ἀμιγές*, but the temperate, which is capable of being heated or cooled: cf. Philop. 477, 12 *ὅρα πῶς εἶπεν τὸ θερμαντόν, τουτέστι τὸ δυνάμενον θερμανθῆναι, καὶ ψυκτὸν τὸ δυνάμενον ψυχθῆναι. τότε γάρ ἐστιν ἡδύ, ὅταν δύνηται δέχεσθαι ἐπίτασιν· τὸ γὰρ ἄμετρον ψυχρὸν καὶ θερμὸν ἀνιαρόν.* With *τὸ θερμαντὸν ἢ ψυκτὸν* as an instance of *τὸ μεικτὸν* the other members of the comparison are left unexpressed, "more pleasant than unmixed hot or unmixed cold." Thus understood, the words are in their right place and the proposal to transfer them to follow b 5 *ἁλμυρὸν* would be mischievous, for the shrill, the sweet, the salt are instances, not of *τὸ μεικτόν*, but of extreme qualities in isolation.

426 b 8—427 a 16. What we have said of the special senses and their special objects comes to this: each such sense has an organ or sensorium of its own and distinguishes or discerns the different qualities of its own proper

object. But such discrimination is not confined to the objects of the separate senses taken by themselves. When, e.g., we compare sweet and white and pronounce them different, this must be an act of sense, for the objects are sensible, not intelligible [§ 10]. Here it may be remarked that the flesh is not the final sensorium, or else comparison and discrimination would imply contact with the objects compared. But if to compare and distinguish is the work of sense, what instrument does the faculty therein employ? Can it employ the agency of two distinct special senses? No, for discrimination implies that both objects are presented to a single arbiter, and two distinct senses no more constitute such a single umpire than do two distinct persons [§ 11]. The unity of judgment presumes the unity of perception and thought. Moreover, not only must there be a single arbiter, but both the objects discriminated must be presented to it simultaneously. For the judgment "*A* is different from *B*" is a pronouncement about *B* as much as about *A*. Further, the coincidence in time is all-important: we must pronounce now and we must pronounce that *A* and *B* are different now [§ 12]. How can we conceive this to be done? Not by physical action, for since all change or movement implies two parts or factors, one the movent, the other the moved, physical changes opposite and simultaneous are impossible when by the use of the term indivisible we exclude a division of that which is moved, its division into these two parts or factors. Let us, then, start with an hypothesis. Suppose that which judges to be numerically indivisible and only logically separable into different parts [§ 13]. This is not possible. The same indivisible unity may potentially be a pair of opposites, but it cannot be in actuality both opposites at the same time, it cannot be simultaneously both white and black, it cannot simultaneously receive the forms of both white and black, as is required by our theory of sensation and thought [§ 14]. Suppose, then, that we use the analogy of the point, which is divisible in the sense that it can be considered as one or as two. That which judges, then, *quâ* indivisible, is single and judges its two objects simultaneously: but it may also be regarded as divisible, and then it is no longer one; the same point is used, we may say, twice in an instantaneous act. Treat the point as two: then it judges two objects with an instrument in some sort divided into two; treat the point as one, and it judges a single object and in an instantaneous act [§ 15].

The problem is very briefly, how can unity know diversity? It is a fact of experience that we pass such judgments of identity and difference: "Sweet is not white" or more generally "*A* is identical with, or different from, *B*." When *A* and *B* are sensibles, Aristotle refers the cognition to sense. But which sense? Each of the special senses is restricted to its own province or sphere. When the objects compared, as sweet and white, belong to different provinces, which is the arbiter, with what do we judge that sweet is not white? Sight takes no account of sweet, nor taste of white. The first suggestion is that we employ the two senses concerned as separate instruments: cf. *De Sensu* 7, 448 b 20—449 a 2, where the analogy of the two eyes which serve as the organ of vision is employed to render more plausible the supposition of a division of the *αἰσθητικὸν* in an indivisible act of perception.

Our first suggestion cannot be sustained: the judgment being one, the arbiter must be one; two separate senses would pronounce two opinions, not one. And if this should be met by modifying the hypothesis, and the two instruments of the single arbiter should be supposed to pass judgment on different objects at different times, A. points out that if the act of comparison is to be instantaneous, the simultaneous presentment of both objects is indis-

pensable. In the judgment "*A* is *now* not *B*" the "now" is not indifferent. The hypothesis of different instruments once excluded, it must be by a single indivisible instrument in an indivisible moment of time that we compare and distinguish diverse sensibles. Such comparison is part of the work of ἡ κοινὴ αἴσθησις, though the phrase is never used in this chapter. This faculty, then, τὸ πρῶτον or κοινὸν αἰσθητικόν, is one and indivisible. But the difficulty remains. This faculty undergoes a certain "motion" when sweet is perceived, the opposite "motion" when the sensible is bitter and a different "motion" when it is white. But simultaneous opposite motions are impossible in the same thing in the same instant of time, unless that thing be capable of division. This apparently insurmountable objection stated, A. offers two hypotheses and professes a preference for the second of the two (cf. *De Sensu* 7, 449 a 10—22, where apparently the same two hypotheses are presented). In the first the indivisible πρῶτον αἰσθητικὸν is numerically and spatially one, but logically diverse, just as in the same object, numerically and spatially one, logical analysis discloses various qualities. But this fails to explain the simultaneous perception of contrary qualities. An object may simultaneously have opposite or diverse qualities (1) potentially, when the object is as yet actually neither, (2) actually, only if it is divisible: e.g. a material thing may be actually black in one part, actually white in another at the same moment, whereas the πρῶτον αἰσθητικὸν is assumed to be an individual unity. A. meets this objection by the analogy of the point, which, though indivisible and devoid of parts, can be regarded either as one or as two.

This passage is the subject of an essay by Alex. Aphr. ἀπ. καὶ λύσ. III. 9, 94, 10 sqq. We also have his valuable commentary on *De Sensu*, c. 7, which discusses the similar problem, whether simultaneous perception of several objects is possible.

426 b 8. **τοῦ ὑποκειμένου αἰσθητοῦ ἐστίν**, "is related to, or concerned with, the sensible which falls under its ken," which is ὑποκείμενον in the sense explained above in first *note* on 425 b 14.

b 9. **ὑπάρχουσα ἐν τῷ αἰσθητηρίῳ.** Cf. *supra* 424 a 24—28, where it is explained that faculty and organ are to one another as form to matter.

b 10. **κρίνει**: cf. 418 a 14, where the same thought is expressed. See Alex. ἀπ. καὶ λύσ. 94, 28 συστήσας, ὅτι ἡ αἰσθανομένη τινῶν καὶ τὰς διαφορὰς αὐτῶν κρίνει (οὐ γὰρ ἄλλης μὲν τὸ αἰσθάνεσθαί τινων, ἄλλης δὲ τὸ κρίνειν τὰς διαφορὰς αὐτῶν, καθ' ἃς ἐστιν αἰσθητά, ἀλλ' ἥ τε αἰσθανομένη τινῶν καὶ κρίνει αὐτά, καὶ ἡ κρίνουσα τὰς διαφορὰς αὐτῶν καὶ αἰσθάνεται αὐτῶν· ταὐτὸν γὰρ κρίνειν τῷ αἰσθάνεσθαι· διὰ τοῦτο γὰρ καὶ ἡ αἴσθησις κρίσις τις εἶναι δοκεῖ). In Book II., however, sense was more often described as ἀλλοιοῦσθαι, πάσχειν, ἐνεργεῖν. In Book III. its discriminating and intellectual side, already noticed 418 a 14, 422 a 21, 424 a 5 sq., is brought out and its relationship to thought and knowledge is emphasised: cf. 432 a 16 τῷ τε κριτικῷ, ὃ διανοίας ἔργον ἐστὶ καὶ αἰσθήσεως. The same process may be viewed in one aspect as πάθος, in another as κρίσις. The position for which Alex. contends is the key to the whole subsequent discussion. Whatever judges two or more sensible objects must *ipso facto* co-instantaneously perceive them.

b 10. **τὰς...διαφοράς**, "the specific differences of the appropriate sensible," e.g. taste pronounces upon sweet, bitter and the other varieties of flavour, which are constituted by these differences: cf. 418 a 13 sq., 420 a 26, 422 b 10, b 31 sq., 423 b 27 sq., 424 a 13.

b 13. **ἕκαστον τῶν αἰσθητῶν πρὸς ἕκαστον κρίνομεν.** A special sense discriminates only specific differences: white and black, though they present

ἐναντίωσις or *μεγίστη διαφορά*, are still in the same genus, colour, they are *ὁμογενῆ*. But discrimination transcends the limits of a single sense and its proper province, for qualities generically distinct are included under the same judgment. Cf. Them. 84, 38 H., 156, 16 Sp. *αἰσθανόμεθα τοίνυν οὐ μόνον τὸ λευκὸν τοῦ μέλανος διαφέρον, ἀλλὰ καὶ τὸ λευκὸν τοῦ γλυκέος.* White and sweet are the objects of two different senses and not, like white and black, objects of the same sense.

b 14. **καὶ αἰσθανόμεθα ὅτι διαφέρει**, int. *ἕκαστον τῶν αἰσθητῶν*. The *καὶ* emphasises the verb *αἰσθανόμεθα*. Cf. Them. 85, 1 H., 156, 17 Sp. *ταύτην οὖν τὴν διαφορὰν καθ' ἣν τὸ λευκὸν τοῦ γλυκέος διενήνοχεν τίς ἐστιν ἡ κρίνουσα δύναμις;* He is undoubtedly right in equating *αἰσθάνεσθαι ὅτι διαφέρει* with *τὴν διαφορὰν κρίνειν*. See above on b 10 *κρίνει*. The answer to this question takes up the rest of the present chapter. **ἀνάγκη δὴ αἰσθήσει**, int. *αἰσθάνεσθαι ἡμᾶς ὅτι διαφέρει*. Cf. *De Sensu* 6, 445 b 15 *ἔτι τίνι κρινοῦμεν ταῦτα ἢ γνωσόμεθα; ἢ τῷ νῷ. ἀλλ' οὐ νοητά, οὐδὲ νοεῖ ὁ νοῦς τὰ ἐκτὸς μὴ μετ' αἰσθήσεως.*

b 15. **αἰσθητὰ γάρ ἐστιν.** The reason given, though it seems decisive for A., would have appeared inconclusive to Plato: cf. *Theaet.* 185 A sqq.

b 16. **τὸ ἔσχατον αἰσθητήριον**, the immediate organ of sense in general, of the so-called common sense, more usually styled *πρῶτον, κοινὸν* or *κύριον αἰσθητήριον*. The words should not be restricted, as some restrict them, to the primary or single organ of touch. What from one point of view is first or primary is from another last or ultimate. Cf. 431 a 19 and see *note* on 422 b 22. The use of *ἔσχατον* to denote a peripheral organ is quite dissimilar: cf. also *τοῦ ὄμματος τὸ ἔσχατον* 423 b 22.

b 16. **ἀνάγκη γὰρ ἦν.** The natural interpretation of this passage is that flesh, the organ of the fundamental sense of touch, cannot be the immediate organ of the common sense, for, if it were, a judgment could only be passed by touching the object itself: nor indeed can a judgment involving qualities perceptible by different senses be formed by means of any of the organs of sense taken separately. The argument becomes consecutive enough so soon as it is recognised that A. here adopts the common opinion, so severely criticised in II., c. 11, that flesh is the organ of touch and that touch requires no medium: in fact, that A. uses precisely the same language as in 424 b 27—30, 435 a 17, *De Sensu* 7, 449 a 24. See Innes, *Class. Rev.* XVI. p. 463. Trend., failing to find the right clue to the sequence of thought, supposed that A. went out of his way to attack once more the views of the earlier physicists, e.g. Empedocles and Democritus, who with their theories of pores and emanations could conceive of sensation as a corporeal process taking effect in all cases through contact alone. Cf. *De Sensu* 4, 442 a 29 sqq. Them. also (85, 5—11 H., 156, 23—157, 2 Sp.) considered b 15 *ἢ καὶ δῆλον*...b 17 *τὸ κρῖνον* as a digression. Simpl. 197, 11 sqq. and Philop. 482, 30 sqq., on the contrary, assume that the whole reference must be to the flesh as corporeal substance, *σῶμα*, of the central organ and not to flesh as the organ or inter-organic medium of the sense of touch. But after gravely informing us that when A. said *σὰρξ* he meant *σῶμα*, that when he said *αἰσθητήριον* he meant *αἴσθησις*, all the meaning they can find in the passage is simply that *ἡ κοινὴ αἴσθησις*, the *αἰσθητικὴ ψυχή*, is nothing corporeal. For the view of Neuhaeuser see next *note*. **αὐτοῦ**, in spite of the preceding *αἰσθητήριον*, must mean the object itself, *τοῦ αἰσθητοῦ*. Neuhaeuser, however, p. 81, thinks this would be too careless even for A. Hence he puts forward a different interpretation of b 15 *ἢ καὶ δῆλον*...b 17 *τὸ κρῖνον*. By the word *ἔσχατον*, he says, A. means the last term of a series, which has no term beyond it, and in the question raised 422 b 34 *πότερον δ' ἐστὶ τὸ αἰσθητήριον*

ἐντός, ἢ οὔ, ἀλλ' εὐθέως ἡ σάρξ Neuhaeuser considers the second alternative, εὐθέως ἡ σάρξ, to be the same view as that here expressed by calling flesh τὸ ἔσχατον αἰσθητήριον. "Statt der früher gebrauchten Worte 'das Fleisch sei nicht sogleich (εὐθέως) das Organ des Gefühlsinnes,' sagt er hier, und zwar durchaus angemessen, 'das Fleisch sei nicht das letzte Organ des Gefühlsinnes,' d. h. sei nicht das Organ desselben in der Weise, dass sich hinter ihm in der Richtung nach Innen nicht noch ein anderes (das eigentliche Organ) befinde." The organ of the central sense must be in contact with the organs of the special senses, if it is to discriminate sensations. It follows that it must be in contact with every point of the flesh, for tactile sensations may occur at any point on the exterior surface of the body. Thus the assumption that flesh is τὸ ἔσχατον ἁπτικὸν αἰσθητήριον is reduced to an absurdity. Neuhaeuser remarks that the same argument would apply to the ultimate organs of the other senses, the central organ being no more to A. than τὸ κοινὸν μόριον τῶν αἰσθητηρίων ἁπάντων, τὸ κοινὸν αἰσθητήριον πάντων τῶν (or τῶν ἰδίων) αἰσθητηρίων, *De Somn.* 2, 455 a 19, *De Iuv.* 1, 467 b 28; 3, 469 a 12. Cf. Them. 85, 5 H., 156, 23 Sp. οὐδὲν οὖν θαυμαστόν, εἰ ἔμπροσθεν ἡμῖν ἐδόκει μὴ εἶναι τὴν ἁφὴν ἐν σαρκί, ἀλλὰ τὴν σάρκα μὲν εἶναι μεταξὺ τοῦ τε ἁπτοῦ καὶ τοῦ ἁπτικοῦ, ἢ εἴ τις καὶ βούλοιτο καλεῖν αὐτὴν αἰσθητήριον, ἀλλ' οὔτι γε πρῶτον οὐδὲ ἐν ᾧ ἡ δύναμις ἐγκαθίδρυται ἡ ἁπτική· προϊὼν γὰρ ὁ λόγος εὑρήσει μὴ περὶ τὴν σάρκα τοῦτο μόνον συμβεβηκέναι, ἀλλὰ καὶ περὶ τὰ λοιπὰ αἰσθητήρια, οἷον λέγω τὴν κόρην καὶ τοὺς διὰ τῶν ὤτων πόρους. Neuhaeuser closely follows Them. in the main outlines of his interpretation, but there is no indication how Them. took the words ἁπτόμενον αὐτοῦ.

b 17. τὸ κρῖνον. Under this disguise, or as ἕν τι, ᾧ ἐπικρίνει ἡ ψυχή, A. refers to what is called *sensus communis*, ἡ κοινὴ αἴσθησις or τὸ πρῶτον αἰσθητικὸν of the *Parva Naturalia*. οὔτε δή. Post οὔτε alterum membrum per anacoluthiam quandam omittitur ac post aliquod intervallum mutata constructione per οὐδὲ adiicitur (*Ind. Ar.* 546 a 8). We have to wait some time for οὐδέ: b 22 ὅτι μὲν οὖν repeats in substance the clause with οὔτε b 17 and ὅτι δ' οὐδ' comes at last in b 23 sq. κεχωρισμένοις. In *De Sensu* 7, 448 b 17 sqq. the problem, is it possible to perceive several objects in the same instant of time, is first approached as formulated thus: (b 20) πρῶτον μὲν οὖν ἆρ' ὧδ' ἐνδέχεται, ἅμα μέν, ἑτέρῳ δὲ τῆς ψυχῆς αἰσθάνεσθαι; (cf. in the recapitulation 449 a 5 εἰ δὲ δὴ ἄλλῳ μὲν γλυκέος ἄλλῳ δὲ λευκοῦ αἰσθάνεται ἡ ψυχὴ μέρει). This is a close parallel to κεχωρισμένοις, but the subsequent words (448 b 21) καὶ οὐ τῷ ἀτόμῳ οὕτω δ' [ἢ οὕτω Ross] ἀτόμῳ ὡς παντὶ ὄντι συνεχεῖ indicate a somewhat different and possibly more developed form of the hypothesis, the separate parts of the sensitive soul being supposed continuous throughout. This might be the case if the peripheral organs were all connected with the central organ by ducts, πόροι, containing some fluid, e.g. breath or blood. The use of the indefinite neuter here, as in τίνι above b 14 and ἑνί τινι below b 18, is probably intentional: if any noun had to be supplied, it would be μορίοις or ὀργάνοις.

b 18. ἀλλὰ δεῖ ἑνί τινι ἄμφω δῆλα εἶναι. It is not by two separate faculties that we can compare and discriminate sweet and white, there must be some single faculty to do this. Alex. Aphr. 95, 8—10 argues that, judgment and perception being inseparable, it is not possible for that which judges both objects to judge both without perceiving both. Now sight does not perceive sweet, nor taste colour. Cf. Lucretius IV. 486—496.

b 19. οὕτω μὲν γάρ, "for at that rate," i.e. if we assume that the difference (e.g. between sweet and white) could be discerned by two different instruments of *sensus communis* judging separately. If this were so (says A.), the difference between the two could be just as well apprehended by two different percipients: which is absurd.

b 20. δεῖ δὲ τὸ ἓν λέγειν. The assumption of two principles as instruments judging separately being discarded, we reaffirm the necessity of a single judging principle (b 19 *οὕτω μὲν*...b 20 *δεῖ δέ*). For the use of λέγειν or φάναι to express a verdict or judgment cf. 431 a 8, *De Mem.* 1, 449 b 22 *δεῖ γὰρ ὅταν ἐνεργῇ κατὰ τὸ μνημονεύειν, οὕτως ἐν τῇ ψυχῇ λέγειν, ὅτι πρότερον τοῦτο ἤκουσεν ἢ ᾔσθετο ἢ ἐνόησεν*, *De Sensu* 7, 447 b 14 *καὶ εἰ μία τοίνυν ἡ αἴσθησις ἡ κατ' ἐνέργειαν, ἓν ἐκεῖνα ἐρεῖ*, 447 b 24 sq.

b 21. ἕτερον γάρ, int. λέγει, "for it does pronounce sweet to be different from white." **λέγει ἄρα τὸ αὐτό.** In this sentence *τὸ αὐτὸ* is the subject and means the same as *τὸ ἕν*, *λέγει* being used absolutely. In the previous sentence, the single deciding faculty is shown to be a necessary consequence of the argument: in this clause it is laid down as a fact which we may now accept.

b 22. νοεῖ καὶ αἰσθάνεται. Cf. 426 b 31 *τὴν αἴσθησιν ἢ τὴν νόησιν*, 427 a 9, 18 sq., 434 b 3 *νοῦν κριτικόν*. Discrimination being the characteristic of sensation and intellect alike, 432 a 16, it is not always easy to determine to which faculty a given judgment should be referred: cf. 429 b 13, 15, 17, 20 sq. Good and bad, the examples which directly follow, are of course *νοητά*, not *αἰσθητά*.

b 22 ὅτι μὲν οὖν...23 τὰ κεχωρισμένα. This resumes or re-states what was said above 426 b 17: see *note* ad loc.

b 24. οὐδ' ἐν κεχωρισμένῳ χρόνῳ. As it is one faculty, and not two, which compares and pronounces, so it is in one time and not in two that the comparison and pronouncement are made, i.e. simultaneously and not successively: cf. 426 b 28. If the first condition were not fulfilled, the action of two senses as parts or instruments of the judging faculty would be as independent as that or different percipients; if the second were not fulfilled, objects could not be pronounced to be *at one and the same time* distinct or identical. **ἐντεῦθεν,** int. *δῆλόν ἐστι*.

b 26. καὶ θάτερον. Fully written out this would be *τότε καὶ θάτερον λέγει ὅτι ἕτερον*. In the same instant, in which the judging faculty pronounces good to be different (from bad), it also pronounces bad to be different (from good).

b 26 (οὐ κατὰ συμβεβηκὸς...28 καὶ ὅτι νῦν). The whole of this is a digression introduced to explain in what sense *ὅτε* is and is not used in the foregoing sentence (b 25) *οὕτω καὶ ὅτε κτέ.* It is not to be understood (says A.) in the same sense as *νῦν* in the example indicated by the words *οἷον νῦν λέγω ὅτι ἕτερον, οὐ μέντοι ὅτι νῦν ἕτερον*, where the note of time is merely incidental (*κατὰ συμβεβηκός*); but it is to be understood as signifying that the difference upon which we are now pronouncing is perceived now; that is to say, the two qualities compared or contrasted (e.g. good and bad) must be simultaneously present to the judging faculty. Cf. Professor Bywater in *Journ. of Phil.* XVII. p. 56. "The argument in fact, if we may simplify its form by ignoring the accessories, is shortly this: *ὅτε θάτερον λέγει ὅτι ἕτερον, καὶ θάτερον* [scil. *λέγει ὅτι ἕτερον*]. *ἅμα ἄρα* [scil. *λέγει*]. The parenthetical note is merely thrown in to prevent a misconception to which the expression *ὅτε λέγει* might possibly give rise."

b 27. νῦν λέγω...νῦν ἕτερον. There is a similar precision *De Mem.* 2, 451 a 30 *μνημονεύει γὰρ νῦν ὃ εἶδεν ἢ ἔπαθε πρότερον, οὐχ ὃ νῦν ἔπαθε, νῦν μνημονεύει.*

b 28. ἀλλ' οὕτω λέγει. The *οὕτω* is explained by what follows: *καὶ νῦν* (int. *λέγει*) *καὶ ὅτι νῦν* (int. *ἕτερόν ἐστι, λέγει*). **ἅμα ἄρα,** int. *λέγει τὸ κρῖνον ὅτι ἕτερόν ἐστι τὸ ἀγαθὸν τοῦ κακοῦ καὶ ὅτι ἕτερόν ἐστι τὸ κακὸν τοῦ ἀγαθοῦ.*

b 28. ὥστε ἀχώριστον, int. *τὸ κρῖνόν ἐστι.* We here reach the main conclusion of the chapter. The remarks which follow from here to the end are an example of what has been called A.'s "subtilitatis luxuria."

b 29. ἐν ἀχωρίστῳ χρόνῳ, int. *κρίνει*. These words, as b 30 sq. *ἐν ἀδιαιρέτῳ χρόνῳ*, replace *ἅμα*. Cf. *De Sensu* 7, 448 b 18, where A. enquires *πότερον ἐνδέχεται*

ἅμα πλειόνων αἰσθάνεσθαι and adds (b 19) *τὸ δ' ἅμα λέγω ἐν ἑνὶ καὶ ἀτόμῳ χρόνῳ πρὸς ἄλληλα.*

b 29. **ἀλλὰ μὴν ἀδύνατον.** One objection is here considered. The two qualities compared are simultaneously present to the same perceiving and judging faculty. Since *κρίνειν*=*αἰσθάνεσθαι* (see *note* on 426 b 10, **κρίνει**), two simultaneous processes go on in that *ὑποκείμενον* in which the faculty resides as *λόγος* or *δύναμις*: in short, in the central organ of sense. It would seem, then, that *τὸ κρῖνον* would upon occasion be subject to different and perhaps contrary affections (here called motions) at one and the same time: which is impossible, unless it is divisible. (A. defines contrary motions as *κινήσεις αἳ ἱστᾶσι καὶ παύουσιν ἀλλήλας Phys.* VIII. 8, 262 a 6—8.) The same impossibility is assumed *De Sensu* 7, 448 a 1 *ἔτι εἰ αἱ τῶν ἐναντίων κινήσεις ἐναντίαι, ἅμα δὲ τὰ ἐναντία ἐν τῷ αὐτῷ καὶ ἀτόμῳ οὐκ ἐνδέχεται ὑπάρχειν, ὑπὸ δὲ τὴν αἴσθησιν τὴν μίαν ἐναντία ἐστίν, οἷον γλυκὺ πικρῷ, οὐκ ἂν ἐνδέχοιτο αἰσθάνεσθαι ἅμα.*

b 30. **ᾗ ἀδιαίρετον,** "in so far as it is undivided," *οὐ κατ' ἄλλο καὶ ἄλλο μόριον*, Simpl. 198, 31, Philop. 484, 5 sq. If it were a body and extended, it could simultaneously apprehend black and white, namely, with different parts of itself. **καὶ ἐν ἀδιαιρέτῳ χρόνῳ,** int. *κινεῖται*. Contrary motions in the same indivisible subject are not impossible, if they are successive, instead of simultaneous.

b 31. **εἰ γὰρ γλυκύ,** int. *ἐστι τὸ αἰσθητόν.*

427 a 1. **ἐναντίως,** int. *κινεῖ τὴν αἴσθησιν ἢ τὴν νόησιν*, which must also be understood with *ἑτέρως*. There can be no doubt that A. would include under *νόησις* in the wider sense imagination and memory: cf. 425 b 25 *αἰσθήσεις καὶ φαντασίαι*, 427 b 17 sqq., 433 a 10. But see 427 a 8 sq. *infra.*

a 2 **ἆρ' οὖν ἅμα μὲν...3 κεχωρισμένον;** A. is endeavouring to make clear how the single judging faculty judges its plurality of objects in an indivisible time. His speculations here must be carefully compared with the similar speculations *De Sensu* 7, 449 a 8 *ἀνάγκη ἄρα ἕν τι εἶναι τῆς ψυχῆς, ᾧ ἅπαντα αἰσθάνεται*...(a 10) *ἄλλο δὲ γένος δι' ἄλλου. ἆρ' οὖν ᾗ μὲν ἀδιαίρετόν ἐστι κατ' ἐνέργειαν, ἕν τί ἐστι τὸ αἰσθητικὸν γλυκέος καὶ λευκοῦ, ὅταν δὲ διαιρετὸν γένηται κατ' ἐνέργειαν, ἕτερον; ἢ ὥσπερ ἐπὶ τῶν πραγμάτων αὐτῶν ἐνδέχεται, οὕτως καὶ ἐπὶ τῆς ψυχῆς. τὸ γὰρ αὐτὸ καὶ ἓν ἀριθμῷ λευκὸν καὶ γλυκύ ἐστι, καὶ ἄλλα πολλά, εἰ μὴ χωριστὰ τὰ πάθη ἀλλήλων, ἀλλὰ τὸ εἶναι ἕτερον ἑκάστῳ. ὁμοίως τοίνυν θετέον καὶ ἐπὶ τῆς ψυχῆς τὸ αὐτὸ καὶ ἓν εἶναι ἀριθμῷ τὸ αἰσθητικὸν πάντων, τῷ μέντοι εἶναι ἕτερον καὶ ἕτερον τῶν μὲν γένει τῶν δὲ εἴδει. ὥστε καὶ αἰσθάνοιτ' ἂν ἅμα τῷ αὐτῷ καὶ ἑνί, λόγῳ δ' οὐ τῷ αὐτῷ.* By *τὸ διαιρετὸν* A. means the central sense regarded as divisible into the five special senses, while *ᾗ ἀδιαίρετον* signifies the same viewed as *αἴσθησις κοινὴ* or *μία αἴσθησις*. Qualities opposite or heterogeneous have to be discriminated at the same time: how is this to be done? The first suggestion for a way out of the difficulty is to apply once more the antithesis of *τόπῳ μὲν καὶ ἀριθμῷ ἓν* (*ἀδιαίρετον*) *καὶ ταὐτό, τῷ δ' εἶναι ἕτερον* (*διαιρετόν*), locally and numerically one and indivisible, while in conception or essence different and divisible. In other words, is this one more instance of the line at once convex and concave? Will the formula help us? The next sentence is a development of the suggested way of escape, it shows us what the application of the formula will be.

a 5. **ἢ οὐχ οἷόν τε;** By these words A. appears to reject the formula just proposed as inapplicable.

a 6 **δυνάμει μὲν γὰρ...7 τῷ ἐνεργεῖσθαι διαιρετόν.** Sense is either potential or actual 417 a 9 sqq., 428 a 6. In contrasting *δύναμις* in general with *ἐνέργεια* A. says *Metaph.* 1051 a 10 *τὸ μὲν οὖν δύνασθαι τἀναντία ἅμα ὑπάρχει, τὰ δ' ἐναντία ἅμα ἀδύνατον· καὶ τὰς ἐνεργείας δὲ ἅμα ἀδύνατον ὑπάρχειν, οἷον ὑγιαίνειν καὶ κάμ-*

νειν. Here, as elsewhere, whether we are dealing with the material or the immaterial, with a sense-organ or a faculty, *ἡ ἐντελέχεια χωρίζει*, *Metaph.* 1039 a 7. Potentially sense is each or both of opposite sensibles. This has been proved in detail. See, e.g., 418 b 26 sqq., 423 b 29 sqq. But in actuality this is no longer the case: the only way in which the same thing can simultaneously be, or receive the forms of, two opposites such as white and black is by becoming divided and so ceasing to be actually indivisible. The organ of a special sense is a material thing, extended, divisible, it can undergo the motion caused by white in one part of itself and simultaneously the motion caused by black in another part of itself. But such explanations are meaningless when applied to the immaterial, unextended, indivisible faculty, the form of the said organ. Cf. 424 a 26—28. See Philop. 484, 18—22.

a 8. ὥστ' οὐδέ, int. *οἷόν τε.* **τὰ εἴδη.** Cf. 424 a 18, where, however, *δέχεσθαι* and not the somewhat unusual *πάσχειν* is employed: and for the process of thought 429 a 15, b 25, 431 b 29, 429 a 27 sq. Judging belongs to thought as much as to sense: cf. 426 b 22 *οὕτω καὶ νοεῖ καὶ αἰσθάνεται.*

a 9. τοιοῦτον, int. *οἷον τὰ εἴδη πάσχειν* or *δέχεσθαι.* There seems no arrière pensée here, though it is quite true that in 424 b 14—18 A. distinguishes between *πάσχειν* and *αἰσθάνεσθαι.*

a 9. ἀλλ' ὥσπερ. This remark is intended to introduce a second, amended and more satisfactory solution. See *Physics* IV. 11, 220 a 10 *καὶ γὰρ ἡ στιγμὴ καὶ συνέχει τὸ μῆκος καὶ ὁρίζει· ἔστι γὰρ τοῦ μὲν ἀρχὴ τοῦ δὲ τελευτή. ἀλλ' ὅταν μὲν οὕτω λαμβάνῃ τις ὡς δυσὶ χρώμενος τῇ μιᾷ, ἀνάγκη ἵστασθαι, εἰ ἔσται ἡ ἀρχὴ καὶ ἡ τελευτὴ ἡ αὐτὴ στιγμή*; see also *ib.* IV. 13, 222 a 12 sq. From these passages we gather that any given point in a line may be regarded as dividing the line into two segments. The one point is the extremity of both these segments, at once the beginning of one and the end of the other: e.g. if *C* be any point on the line *AB*, *C* is at once the end of the line *AC* and the beginning of the line *CB*. Alex. Aphr. (96, 14 sqq.) understands the illustration to apply to the centre of a circle, which, though a single point, is still the extremity of an indefinite number of convergent radii. But the case I have given is the simplest and best fits the language of the text. In the point we thus find something which, while one and indivisible, yet has simultaneously different relations and is in a certain aspect divisible. So, too, the judging faculty of sense may be treated as at once single (*αἴσθησις κοινή, μία αἴσθησις*) and divisible.

a 10. ἣν καλοῦσί τινες στιγμήν. I see no ground for interpreting this to mean anything else than the geometrical point: the context shows that *σημεῖον* or *πέρας* might have been used (cf. 431 a 22 *ὅρος*): or, if A. had been dealing with the point in time, he would have called it the "now," and it is quite certain that he would not have applied to the "now" the unqualified terms *σημεῖον, πέρας* or *ὅρος*. Cf. Neuhaeuser, p. 45.

a 10. ᾗ μία ἢ δύο, ταύτῃ καὶ διαιρετή. This is Biehl's conjectural restoration. Bekker rightly felt that a relative *ᾗ* must precede *ταύτῃ* and therefore rejected the reading *ἡ μία ἢ δύο*, which has the greatest authority, viz. E, vet. trans., Alex. Aphr. 94, 20: but he went too far when he replaced it by *ᾗ μία καὶ ᾗ δύο*, for the point, *ᾗ μία*, "regarded solely as single," is not divisible. It is divisible because it can be regarded at will not as single, but as double. Cf. *Metaph.* 1002 a 32 *τὰς δὲ στιγμὰς καὶ τὰς γραμμὰς καὶ τὰς ἐπιφανείας οὐκ ἐνδέχεται οὔτε γίγνεσθαι οὔτε φθείρεσθαι, ὁτὲ μὲν οὔσας ὁτὲ δὲ οὐκ οὔσας. ὅταν γὰρ ἅπτηται ἢ διαιρῆται τὰ σώματα, ἅμα ὁτὲ μὲν μία ἁπτομένων, ὁτὲ δὲ δύο διαιρουμένων γίγνεται· ὥστ' οὔτε συγκειμένων ἐστὶν ἀλλ' ἔφθαρται, διῃρημένων τε εἰσὶν αἱ πρότερον οὐκ οὖσαι.* **οὐ γὰρ δὴ ἥ γ' ἀδιαίρετος στιγμὴ διῃρέθη εἰς δύο.**

a 11. **ἅμα**, int. κρίνει. Or, as A. tends to treat ἅμα sometimes as an adjective, sometimes as an adverb, we might supply κρῖνόν ἐστι.

a 12. **ᾗ δὲ διαιρετόν, οὐχ ἓν ὑπάρχει.** According to Stapfer, *Studia*, p. 8, cod. E has διαιρετὸν ὑπάρχει δὶς τῷ, but a later hand has inserted οὐχ ἓν before δὶς and γὰρ before τῷ. Whether οὐχ ἓν comes before or after ὑπάρχει, the verb must be supplied a second time. Cf. *note* on 403 b 18.

a 12 δὶς γάρ...13 ἅμα. Note the usual confusion between the illustration and the fact it is intended to illustrate. Cf., e.g., 402 b 6 sqq., 403 a 12 sqq. The geometer treats the single point *C* twice over, as the extremity both of the line *AC*, which it ends, and of the line *CB*, which it begins. The single judging faculty similarly treats its single object, e.g. the difference between sweet and white, twice over, for it cannot pronounce that sweet is not white without at the same time pronouncing that white is not sweet. Cf. 426 b 25 οὕτω καὶ ὅτε θάτερον λέγει ὅτι ἕτερον καὶ θάτερον.

a 13. **δυσὶ χρῆται.** Cf. *Phys.* IV. 11, 220 a 17 τῇ γὰρ μέσῃ στιγμῇ ὡς δυσὶ χρήσεται.

a 14. **ἔστιν ὡς κεχωρισμένῳ.** The dative gives a tolerable sense and has the support of Alex. Aphr. 94, 23 ἔστιν ὡς τῷ κεχωρισμένῳ. Of course it is an instrumental dative, like τίνι 426 b 14, as Trend. saw: quodammodo separato instrumento. Cf. *De Sensu* 7, 449 a 10 ἄλλο δὲ γένος δι' ἄλλου. I cannot accept M. Rodier's version "et ces choses sont séparées, comme elles peuvent l'être dans le divisé." Both ἔστιν ὡς and the singular κεχωρισμένῳ modify and correct the apparent inconsistency with 426 b 17 οὔτε δὴ κεχωρισμένοις and b 22 sq. Trend. was naturally dissatisfied with the text bequeathed to him by Bekker καὶ κεχωρισμένα ἐστὶν ὡς κεχωρισμένων, "et sunt diversa velut diversorum." He saw that ἔστιν ὡς must be taken together and remarked that it would be easier to substitute κεχωρισμένον (cf. Soph. 114, 38) for κεχωρισμένων. But, so long as A. is concerned to emphasise the unity of the judging faculty, he is more likely to say that the instrument it employs is "in some sense separated into two" than to concede so much of the faculty itself. Trend., according to Belger, was finally of opinion that <τῷ> κεχωρισμένῳ should be read with Alex. Aphr. Wallace, who himself held that the dative should be retained on the authority of Alex. Aphr. 94, 23 and Simpl. 201, 19, pointed out the possibility of taking κεχωρισμένω as dual.

a 14. **ᾗ δ' ἑνί, <ἓν> καὶ ἅμα.** The text of the better MSS. E L, with which S V X agree, is ᾗ δ' ἑνὶ καὶ ἅμα and Biehl accepts this, placing a comma after ἑνί. We have to decide whether this abbreviated version is genuine, in which case the authorities which prefix ἓν to ἑνί, beginning with Alex. Aphr., have made an arbitrary addition, or whether the abbreviated text is the result of accident, ἓν having dropped out either before or after ἑνί. I believe that Bekker was guided by a true instinct when he admitted both ἓν and ἑνὶ into the text. The case of the inferior MS. U is instructive: whereas E L S V X read ἑνὶ and omit ἕν, the first hand of U, according to Bekker, reads ἓν and omits ἑνί. But, in spite of Alexander and Simplicius, the probability that ἓν ἑνὶ is the right order is but slight. To balance the preceding clause ᾗ μὲν οὖν δυσὶ we require ᾗ δ' ἑνὶ and then ἓν should follow to balance δύο κρίνει, which is exactly what Christ's emendation provides. The single object of the single judging faculty is, in short, identity or difference: the difference, e.g., between white and sweet, and this, A. has been insisting all along, is instantaneously perceived.

It is natural to enquire what advantage the second hypothesis, that of the point, possesses over the first: does it remove the difficulty of 426 b 29 sqq., the impossibility of contrary "motions" in an indivisible subject at the same instant

of time? The suggestion I have made in the second *note* on a 12 *supra* seems at first sight to increase this difficulty, since it implies that simultaneously judgment is passed on each of the two sensibles: "A is not B," "B is not A." The considerations adduced by Alex. Aphr. (97, 25 sqq.) do not help us, to whichever hypothesis we apply them. Very briefly, Alex. says that while the motion of perceiving white is contrary to the motion of perceiving black, the judgment "White is white" is not contrary to the simultaneous judgment "Black is black." Contrariety in the judgment only comes in when we simultaneously pronounce that white is both white and black. But the two judgments "White is white" and "Black is black" still imply the presence of two sensibles which affect sense, and, if these judgments are simultaneous, the simultaneous affection of sense by the two objects. Moreover Alex., who previously declared judgment and sensation to be inseparable (94, 32 ταὐτὸν γὰρ κρίνειν τῷ αἰσθάνεσθαι, cf. the whole citation in *note* on 426 b 10 *supra*), now distinguishes παθεῖν from κρίνειν: 97, 27 παθεῖν μὲν γάρ τι τὸ αὐτὸ ἅμα τὰ ἐναντία ἀδύνατον...28 κρῖναι δὲ ἅμα τὰ ἐναντία οὐδὲν ἀδυνατεῖ. The judgment which sense pronounces can be due to nothing but that process or affection or movement of sensation, which is a fact of experience: cf. 426 b 22 ὡς λέγει, οὕτω καὶ αἰσθάνεται. We are still as far as ever from learning what precisely is the "motion" of which the judgment of comparison "A is not B" is the result. Aristotle rigidly adheres to the assumptions made tacitly in this chapter, explicitly in *De Sensu*, c. 7: a single faculty, a single act; a single act, a single object: and his only way of escape is to convert the two sensibles present to the same judging faculty in the same instant of time into some sort of unity (e.g. white-black, sweet-white) compatible with the diversity implied in the co-existence of different relations.

CHAPTER III.

This chapter might be entitled περὶ φαντασίας, but prior to 427 b 27, where something like a plan of procedure is enunciated, we find a series of preliminary remarks and criticisms of which the intention is not obvious. A. begins by associating sensation and thought by the common link of judgment or discrimination 427 a 18 sq., a 20. In the absence of any explicit statement until 427 b 27—29 the purpose of this association is not clear. Probably A. means that the critical or discriminating faculty has not been exhausted: there still remain over for discussion whatever mental processes, if any, involve discrimination and at the same time do not fall under sensation or have not been treated already. His own view, which we gather partly from this treatise and still more fully from the *Parva Naturalia* and other works, is that thought in the narrower sense, or intellection properly so called, is the chief of these processes, but that there are others subsidiary to thought, especially imagination and memory. But A.'s procedure is not at first dogmatic and categorical, although the much disputed sentence 427 b 14—16 may be said to anticipate his final result, and presupposes an acquaintance with this result, if it is to be thoroughly comprehended. On the contrary, A. proceeds tentatively on a somewhat circuitous route. He has to deal, not for the first time in this treatise, with the wide-spread opinion, endorsed by Pre-Socratic schools, that there is no essential difference between sensation and thought, both being material changes in the animal body. On this view was based the Empedoclean theory of perception by means of channels, πόροι, and the Atomistic hypothesis that all

perception, knowledge included, takes place by contact with εἴδωλα or material emanations from external objects. A. controverts such theories by an appeal to the fundamental conceptions of truth and error, which play so large a part in his logic. Probably the current views and the older Pre-Socratic philosophical theories would put φαντασία or ὃ ἐμοὶ φαίνεται on a level with αἴσθησις and νόησις, all alike being regarded as changes in the animal body due to impact of something external. It is unlikely that any sharp distinction would be drawn between them, so that what A. himself understands by φαντασία, viz. presentation, whether to sense or thought, whether in the presence or absence of an external object, would be identified, now with αἴσθησις, now with νόησις. In this way I am tempted to explain the very vague use of νοεῖν and νόησις, especially in the passage 427 b 16—29, in which a division of νοεῖν into φαντασία and ὑπόληψις seems, at any rate provisionally, to be admitted. Further on in the treatise A. is very careful to define what he means by νοεῖν 429 a 10 sq., 23. That he is not using the term so strictly in the present passage is seen at once when we find that νοῦς in this narrower sense is by implication only one species of the powers or faculties, δυνάμεις ἢ ἕξεις, which are brought into play in the process of thinking, νοεῖν, taken in the wider sense: cf. 427 b 27—29 with 428 a 1—5, 16—18. As before, 427 a 29 sqq., he assailed the position that there is no difference between sensation and thought by introducing ἀπάτη, so again A. seems to me to be tacitly controverting the position that φαντασία = αἴσθησις = νόησις (all three processes being, on Pre-Socratic assumptions, on the same footing as corporeal changes) by an appeal to ὑπόληψις 427 b 16, 17, 24 sq., 28, a term which, like ἀπάτη, involves the fundamental distinction between true and false. For, though on the whole ὑπόληψις, belief, stands nearest to δόξα, the weakest form of conviction, it is also predicated of the stronger forms ἐπιστήμη and φρόνησις. A. firmly held that not only the maxim of Protagoras, but also most of the Pre-Socratic theories of knowledge, were inconsistent with the distinction between true and false and led inevitably to the conclusion πᾶν τὸ φαινόμενον ἀληθὲς εἶναι. This first part of the chapter down to 427 b 26 is a desultory criticism of the earlier views, and the obscurity of certain parts of it is due to terms like φρόνησις and νόησις, φρονεῖν and νοεῖν being used sometimes with the same vagueness as by the older philosophers, sometimes in A.'s own technical sense.

427 a 17—b 14. The soul is defined by two powers, (1) the power of causing spatial motion and (2) the power of discerning or apprehending, which is shown both in sense and in thought. Indeed, that sense and thought are even identical is a popular opinion which has the support of some philosophers [§ 1]. This opinion is natural, where thought and sense are regarded as something corporeal, and like is held to be apprehended by like. But such a view ought properly to include, what is not forthcoming, an explanation of error also [§ 2]. Moreover, that sense and thought are not identical seems clear from the fact that the former is a property of all animals, the latter of but few. Again, thinking may be right or wrong, false or true, which is not the case with perception by sense [§ 3].

427 a 17. ἐπεὶ δέ. As frequently happens when A. is lost in a labyrinth of parentheses, it seems doubtful where the apodosis begins or whether there is one at all. The obvious difficulties and the expedients available which occurred to Bonitz and Torstrik are precisely those which had already occurred to Alexander, Plutarch of Athens and the other Greek commentators, while the text is above suspicion. We may frankly admit anacoluthon with Alex. Aphr. (*apud* Philop. 489, 9), and it is only a modification of this view to hold, with

Torstrik, that A. ought to have written (and, Torstrik adds, probably did write) after a 19 *αἰσθάνεσθαι* something like *σκεπτέον εἴ τι διαφέρει τὸ νοεῖν τοῦ αἰσθάνεσθαι*, just as Argyropylus felt constrained to insert in his version *considerandum est si quid intersit inter intelligere et sentire.* Or, on the other hand, we may follow Plutarch (*apud* Philop. 489, 10) in making the apodosis begin at b 6 *ὅτι μὲν οὖν οὐ ταὐτόν ἐστι.* This solution was accepted by Simplicius and Philoponus, while Bonitz in *Arist. Stud.* II.—III., pp. 131—133 considers this to be the best expedient, if the idea of an anacoluthon is to be rejected. By the time A. had reached b 6 *ὅτι μὲν οὖν* it is very unlikely that he was conscious of any grammatical connexion between the new clause and a 17 *ἐπεὶ δέ.*

a 17. **δύο διαφοραῖς.** Cf. 403 b 25 *τὸ ἔμψυχον δὴ τοῦ ἀψύχου δυοῖν μάλιστα διαφέρειν δοκεῖ, κινήσει τε καὶ τῷ αἰσθάνεσθαι*: cf. also *infra* 432 a 15 sqq.

a 18. **τῷ κρίνειν.** Cf. Alex. Aphr., cited in *note* on **κρίνει** 426 b 10. This power of judging is obviously the common element in sense and thought: cf. *infra* 427 a 20 *ἐν ἀμφοτέροις γὰρ τούτοις κρίνει.* Whether we perceive or whether we think, we of necessity discriminate: we judge the thing known to be different from all other things and to be the same with itself.

a 19. **δοκεῖ δὲ.** This *ἔνδοξον* or prevalent opinion is so far from being A.'s own that he proceeds to refute it below.

a 20. **αἰσθάνεσθαί τι,** "während manche das Denken für eine Art von Wahrnehmen halten," Bz. *Ar. Stud.* II.—III. 132. The same uncertainty recurs as to the construction of *τι*, which was pointed out in the *note* on **πάσχειν τι** 410 a 25. I prefer to regard it as a contained accusative and not as an attribute of the infinitive transformed into a noun, and I think there is some support for my view in *κρίνει τι* following. **ἐν ἀμφοτέροις γὰρ τούτοις**, i.e. *τῷ αἰσθάνεσθαι* on the one hand and *τῷ νοεῖν καὶ φρονεῖν* on the other: *ἐν* may well be instrumental.

a 21. **τῶν ὄντων** separated from *τι*, with which it must be taken; see *note* on hyperbaton 403 b 25. **οἵ γε ἀρχαῖοι.** Cf. 404 a 27 sqq., 405 a 9 sqq., 410 a 23—26, *Metaph.* 1009 b 12 sqq., where the opinion in question is attributed to Empedocles, Democritus, Parmenides, Homer; and to Anaxagoras on the dubious authority of an apophthegm. It is interesting to compare this list with that given in Plato, *Theaet.* 152 E sqq.

a 23. **πρὸς παρεὸν γάρ.** It is probable that Empedocles did not mean by this line (*frag.* 106 D) to assert the identity of thought with sense. The line is again cited *Metaph.* 1009 b 12—21, a passage which shows more clearly by what reasoning A. was led thus to interpret the words of Empedocles. Thought is perception, perception is change. Therefore the quality of our thought depends upon the change in our bodily state or the condition of the sense-organs (l.c. b 17 *καὶ γὰρ Ἐμπεδοκλῆς μεταβάλλοντας τὴν ἕξιν μεταβάλλειν φησὶ τὴν φρόνησιν*). This is not, however, the way in which the Greek commentators understand the passage. They make *παρεὸν* refer to the object presented (*αἰσθητόν*): thus Alex. Aphr. *in Metaph.* 306, 19 *τουτέστι πρὸς τὸ παρὸν γὰρ* **καὶ τὸ φαινόμενον** *ἡ φρόνησις γίνεται καὶ ἡ τοῦ ἀληθοῦς κατάληψις τοῖς ἀνθρώποις* (*μῆτις γὰρ ἡ φρόνησις*)· *τοῦτο γὰρ ἴδιον αἰσθήσεως*, Them. 87, 23 H., 161, 7 Sp. *τοῦτο γὰρ αἰσθήσεως ἴδιον ὑπὸ τῶν αἰσθητῶν παρόντων κινεῖσθαι.*

a 24. **ὅθεν.** This word is no part of the citation as given in a fuller and slightly different form *Metaph.* 1009 b 20 sq. *ὅσσον τ' ἀλλοῖοι μετέφυν, τόσον ἄρ σφισιν αἰεὶ | καὶ τὸ φρονεῖν ἀλλοῖα παρίστατο* (*frag.* 108 D).

a 25. **ἀλλοῖα.** Cf. Homer, as quoted 404 a 30: *κεῖτ' ἀλλοφρονέων*, "he lay distraught." On this view of thought, it varies and fluctuates with the bodily condition. There are variations between man and man, and in the same man

at different times and under different conditions. **παρίσταται**, "comes to them," "arises in them."

a 26. τοῖος γὰρ νόος ἐστίν. From *Od.* XVIII. 136 sq.

τοῖος γὰρ νόος ἐστὶν ἐπιχθονίων ἀνθρώπων
οἷον ἐπ' ἦμαρ ἄγησι πατὴρ ἀνδρῶν τε θεῶν τε.

a 26. σωματικὸν. Cf. 410 a 28 ὡς τοῖς σωματικοῖς στοιχείοις ἕκαστα γνωρίζεται of Empedocles: also 404 b 13—15.

a 28. ἐν τοῖς κατ' ἀρχὰς λόγοις. A clear reference to I., c. 2, where both views, viz., (1) that thought, as well as perception, is something corporeal, and (2) that we think, as well as perceive, like by like, are attributed to Empedocles or others 404 b 7 sqq., 405 b 11 sqq. For the form of the reference, cf. *Pol.* 1278 b 18 εἴρηται δὲ καὶ κατὰ τοὺς πρώτους λόγους.

427 b 1. οἰκειότερον γάρ, int. τὸ ἠπατῆσθαι. Error, says A., is more truly natural to living things than right thinking. Cf. Theophr. *apud* Them. 108, 27 H., 200, 8 Sp. διὰ τί λήθη καὶ ἀπάτη καὶ ψεῦδος;

b 3. ἔνιοι λέγουσι, amongst them Democritus, to whom this opinion is attributed 404 a 28 τὸ γὰρ ἀληθὲς εἶναι τὸ φαινόμενον: see *note*. Cf. also *Metaph.* 1009 b 13 τὸ φαινόμενον κατὰ τὴν αἴσθησιν ἐξ ἀνάγκης ἀληθὲς εἶναί φασιν. In *De Caelo* III. 7, 306 a 16, A. himself asserts that τὸ φαινόμενον ἀεὶ κυρίως κατὰ τὴν αἴσθησιν is the net result or outcome, τέλος, by which, after all, any physical theory has to be verified. This, however, is merely an emphatic way of saying that theories must agree with facts.

b 4. τὴν τοῦ ἀνομοίου θίξιν. Upon the view that thought and perception, the means by which we acquire knowledge, are material processes in which like acts upon like, the action of unlike upon the bodily organ is the cause of error.

b 5. ἡ ἀπάτη καὶ ἡ ἐπιστήμη τῶν ἐναντίων ἡ αὐτή. The man who has knowledge or right views about one of two contraries has knowledge or right views about the other: cf. *note* on 411 a 4. So with error: the man who is mistaken or has wrong views about one of two contraries is *ipso facto* mistaken about the other. This is because contraries always belong to the same genus, of which they are the two most opposed species; e.g. black and white in the genus colour. To know white is to distinguish it from all the other colours and therefore from black. The point of the present passage is that what A. is fond of asserting about knowledge (cf. *Anal. Prior.* I. 1, 24 a 21, 36, 48 b 5, *Top.* I. 14, 105 b 5 sq., 23 sq., *Phys.* VIII. 1, 251 a 30, *Metaph.* 996 a 20 sq., *Eth. Nic.* 1129 a 13 sq., 17 sq.) holds good of error also.

b 6. ὅτι μὲν οὖν. Cf. Philop. 490, 15 τὸ δὲ οὖν διὰ τὴν μεταξυλογίαν κεῖται· ἔθος γὰρ εἶχον οἱ παλαιοὶ ἐν ταῖς μακραῖς ἀποδόσεσι προστιθέναι τὸ οὖν. See *note* on a 17 *supra* ἐπεὶ δέ.

b 7. καὶ τὸ φρονεῖν. Here A. appears to separate φρονεῖν from νοεῖν, the latter term being used in a vaguer manner, including φρόνησις, ἐπιστήμη, δόξα, as species under it, when the thinking is correct, and their opposites when it is erroneous. As a technical term, φρόνησις is restricted to thought which has a practical end in view: cf. *Eth. Nic.* 1140 b 4 (φρόνησιν) εἶναι ἕξιν ἀληθῆ μετὰ λόγου πρακτικὴν περὶ τὰ ἀνθρώπῳ ἀγαθὰ καὶ κακά; cf. *ib.* 1143 a 8 sq. But in *De A.* φρονεῖν hardly seems to be a technical term; cf. 417 b 8 and 429 a 10 γινώσκει τε ἡ ψυχὴ καὶ φρονεῖ (a general description of the functions of νοῦς). The term is appropriate in the discourse of those who held one thought to be as right as another.

b 8. τοῦ δέ, int. τοῦ φρονεῖν. That φρόνησις of some sort is, in A.'s view, attributable to some animals appears from *Metaph.* 980 a 28 sqq. and also from *Eth. Nic.* 1141 a 26 διὸ καὶ τῶν θηρίων ἔνια φρόνιμά φασιν εἶναι, ὅσα περὶ τὸν αὐτῶν βίον ἔχοντα φαίνεται δύναμιν προνοητικήν.

b 8. οὐδὲ τὸ νοεῖν. The nominative, after the insertion of a relative clause and then a parenthesis, is taken up and repeated in *οὐδὲ τοῦτο* at 427 b 11 *οὐδὲ τοῦτο* [δ'] *ἐστὶ ταὐτὸ τῷ αἰσθάνεσθαι.*

b 9. τὸ ὀρθῶς καὶ τὸ μὴ ὀρθῶς. Of thinking you can say that it is done "rightly" or "wrongly": you cannot say this of perceiving in the normal case, to which the term sense-perception strictly and properly belongs, *τῶν ἰδίων αἴσθησις.* But see 428 b 19 **ὅτι ὀλίγιστον**, *note.*

b 9 τὸ μὲν ὀρθῶς...11 τἀναντία τούτων. This is a parenthesis. Within it *φρόνησις κτέ.* are in apposition to *τὸ μὲν ὀρθῶς* (int. *νοεῖν*), *τἀναντία* to *τὸ δὲ μὴ ὀρθῶς* (int. *νοεῖν*).

b 11. [δ']. If this quite superfluous **δὲ** be retained, it is a proof that the writer has lost the thread of his argument owing to the preceding parenthesis.

b 12. ἀεὶ ἀληθής. Cf. *supra* 418 a 11 *λέγω δ' ἴδιον μὲν ὃ μὴ ἐνδέχεται ἑτέρᾳ αἰσθήσει αἰσθάνεσθαι*, **καὶ περὶ ὃ μὴ ἐνδέχεται ἀπατηθῆναι,** where see *note.*

b 14. ᾧ μὴ καὶ λόγος, int. *ὑπάρχει.* That no animal devoid of reason can think, in the strict sense of the term, is implied in 415 a 6—11. Cf. *Eth. Nic.* 1097 b 33—1098 a 3.

427 b 14—24. Imagination is something distinct both from sense-perception and from thought. It presupposes the former (*αἴσθησις*) and is essential to belief (*ὑπόληψις*), but clearly thinking is not the same as believing. Thinking is under our own control, for we can form mental images at pleasure, as the system of mnemonics shows. We cannot, however, form opinions at will, for opinion must be either true or false. Again, the opinion that something terrible is imminent affects us powerfully, while a mere mental image affects us no more than the representation of an event in a painting [§ 4].

The subject of this section, the difference between imagination and opinion, is treated again below 428 a 18—b 9 and as though there had been no previous discussion of it here. Freudenthal called attention to this fact in his classic monograph *Ueber den Begriff des Wortes φαντασία bei Aristoteles.* The present passage 427 b 14 sqq. opens a distinct paragraph and should not be forced into too close a relation with the preceding sentences: hence I have put a full stop after *λόγος* 427 b 14.

427 b 14. φαντασία γὰρ ἕτερον. What are we to understand by *γάρ*? In other words, why is *φαντασία* introduced for comparison just at this point? Freudenthal has suggested (p. 10) that it is to meet a possible objection to the last argument, an argument adduced to show that perception is distinct from thought. Suppose the objector to urge: "You say that thought is found in few animals, sensation in all; but then there is *φαντασία*, a species of sensation, which also, like thought, is not found in all animals." This objection is met, according to Freudenthal, by distinguishing imagination from both sense and belief, which is one species of thought, imagination itself being apparently the other, at least in the popular use of the term: cf. 427 b 28, where, however, **δοκεῖ** must not be pressed as if it were a strictly scientific view. Such ellipses as that assumed by this explanation are not uncommon in Aristotle. But this is an extreme case and the explanation is therefore questionable. A simpler one is given by Pacius. According to him, A. is still arguing that sense is distinct from thought, for imagination is different from both sense and thought; and, we may presume, two things which have a third thing intermediate between them must be distinct from one another. But the argument would then be wholly inconclusive, for we have merely *ἕτερον*, "distinct," not "intermediate" in the text; and it is not true that two things are proved to be distinct from each other because a third thing is distinct from both. If *γὰρ* must be pressed, I would suggest that the sentence may refer back to the resolution of **νοεῖν** into

φρόνησις, ἐπιστήμη and δόξα 427 b 9—11. The sense of the sentence introduced by γὰρ would then be: "I have omitted φαντασία in this division, for it is distinct, not only from αἴσθησις, but also from διάνοια or τὸ νοεῖν." The whole context abundantly proves that νοεῖν and διανοεῖσθαι, νόησις and διάνοια are used indifferently. Memory is to A. one species of φαντασία, *De Mem.* 1, 451 a 2 sqq., 14 sqq. and in *Metaph.* 980 a 27 sqq., *Anal. Post.* II. 19, 99 b 34 sqq. A. traces a successive development from sensation, through memory, to experience, knowledge and art. In the scale of development sensation necessarily precedes imagination, as the latter necessarily precedes opinion and belief. Cf. Them. 88, 27 H., 163, 2 Sp. ἥπερ [int. φαντασία] ἀμείνων μὲν δύναμις τῆς αἰσθήσεως, πολὺ δὲ ὑποβεβηκυῖα τῆς διανοίας, καὶ ὥσπερ ἀμφοῖν ἐν μεθορίῳ κειμένη καὶ ἐπακολουθοῦσα μὲν τῇ αἰσθήσει, προλαμβάνουσα δὲ τὴν ὑπόληψιν.

b 15. αὐτή τε οὐ γίγνεται ἄνευ αἰσθήσεως. The subject is φαντασία. Cf. the definition given below 428 b 11—13, 14—16. Here αὐτή, "alone," *per se*, strengthens ἄνευ αἰσθήσεως.

b 16. ταύτης, i.e. φαντασίας.

b 16. ὑπόληψις. We should rather have expected διάνοια. What then is the relation between the two? It must be close, for in 429 a 23 ὑπολαμβάνει is obviously added to explain διανοεῖται. Bonitz (*Ind. Ar.* 186 a 60) says: ἡ διάνοια, ipsa actio cogitandi, distinguitur quidem ab ea sententia et persuasione, ad quam cogitando pervenitur...sed saepe διάνοια cum actione simul effectum (τὴν δόξαν, τὴν ὑπόληψιν) comprehendit. Thus διάνοια is the process of which ὑπόληψις is the result. Cf. *Metaph.* 981 a 5 ὅταν ἐκ πολλῶν τῆς ἐμπειρίας ἐννοημάτων μία καθόλου γένηται περὶ τῶν ὁμοίων ὑπόληψις, where Bonitz notes ὑπολαμβάνειν is "to suppose" or assume something as true, whether it be true or not. And so ὑπόληψις is a supposition or assumption or belief, whether true or false. Cf. *Metaph.* 1005 b 25 οὐκ ἔστι γὰρ ἀναγκαῖον, ἅ τις λέγει, ταῦτα καὶ ὑπολαμβάνειν. The term ὑπόληψις is not a technical term, and is chosen here because it will include ἐπιστήμη, δόξα and φρόνησις. Of these technical terms, δόξα is the one which most nearly approaches it, as "opinion" approaches to "belief." It is substituted for it 434 a 20 (cf. 434 a 17). Cf. *Eth. Nic.* 1139 b 17 ὑπολήψει γὰρ καὶ δόξῃ ἐνδέχεται διαψεύδεσθαι, and also *Anal. Post.* I. 33, 89 a 2 λείπεται δόξαν εἶναι περὶ τὸ ἀληθὲς μὲν ἢ ψεῦδος, ἐνδεχόμενον δὲ καὶ ἄλλως ἔχειν. τοῦτο δ' ἐστὶν ὑπόληψις τῆς ἀμέσου προτάσεως καὶ μὴ ἀναγκαίας, *ib.* 89 a 38 sqq. As Bonitz notes, ὑπολαμβάνειν is synonymous with τιθέναι *Metaph.* 998 a 20, 22 and ὑπόληψις with δόξα in the phrases *Metaph.* 1073 a 17 ἡ περὶ τὰς ἰδέας ὑπόληψις and 1078 b 12 ἡ περὶ τῶν εἰδῶν δόξα. Them. glosses δόξα and ὑπόληψις by the Stoic term συγκατάθεσις = assent (89, 1, 6, 21, 23 H., 163, 21, 29; 164, 18, 21 Sp.) and paraphrases δοξάσωμεν b 21 by ὑπολάβωμεν (89, 14 H., 164, 10 Sp.).

b 17. ἡ αὐτὴ νόησις καὶ ὑπόληψις. The perplexity which this passage has occasioned can, I think, be better removed by interpretation than by emendation. The words of the text naturally mean "νόησις is clearly not the same as ὑπόληψις." The objections to this are, first, that we have been dealing with φαντασία just before and, secondly, that A. goes on to support his assertion by adducing instances where φαντασία differs from δόξα. These objections do not seem insuperable. How closely ὑπόληψις and δόξα are related has been seen in the preceding note: it is as easy to show that there is a close relation between νόησις and φαντασία. The free play of the imagination repeatedly occurs as the first and most obvious instance of thought, νόησις, in the wider sense: cf. 432 b 30, *De Mem.* 1, 450 a 1—7. In the stricter sense of the terms, of course, φάντασμα is not νόημα itself, but its indispensable condition, 432 a 13 sq. But both νοεῖν and διανοεῖσθαι are unquestionably used, as in the passages just cited,

for τίθεσθαι πρὸ ὀμμάτων, which we describe as picturing or imagining and the Greeks as φαίνεσθαι or φαντάζεσθαι. There is nothing unreasonable, then, in the remark of Simpl. 206, 5 sq., Philop. 492, 24 that by νόησις A. means φαντασία and by ὑπόληψις either ἡ λογικὴ γνῶσις as a whole or one species of it, δόξα. Cf. Prisc. Lyd. 29, 3 ἐοίκασι δὲ οἱ ἄνδρες οὗτοι, καὶ ὁ Ἀριστοτέλης καὶ ὁ Θεόφραστος... νοῦν ἐνίοτε καὶ πᾶσαν τὴν λογικὴν προσαγορεύειν ζωήν, ὅπου γε καὶ μέχρι φαντασίας τὸ τοῦ νοῦ διατείνουσιν ὄνομα.

However, doubt must have been felt long ago as to the exact interpretation of νόησις, for which Themistius in his paraphrase substitutes φαντασία: 88, 33 H., 163, 11 Sp. οὐ μὴν αἱ αὐταί εἰσι (the subject is the three faculties, δυνάμεις, into which Them. has just divided ὑπόληψις) τῇ **φαντασίᾳ**. ὅλως γὰρ τὸ ὑπολαβεῖν εἴτε δοξαστικῶς, εἴτε ἐπιστημονικῶς, εἴτε δὴ κατὰ φρόνησιν ἑτέρας ἐστὶ δυνάμεως καὶ οὐ **φαντασίας**. The substitution of φαντασία for νόησις, suggested in the margin of cod. U, appears in the Aldine edition and that of Sylburg and was finally accepted by Biehl in his *nova impressio* of 1896. The change is unnecessary, if νόησις can be taken in the way suggested above, corresponding to the lax use of νοεῖν and νόημα, e.g. in *De Mem.* Freudenthal met the difficulty in another way by making ἡ φαντασία the subject understood and ἡ αὐτὴ νόησις the predicate, and taking καὶ="as" after ἡ αὐτὴ νόησις: "that imagination is a different kind of thought from belief is clear." Below, b 28, τὸ νοεῖν includes both φαντασία and ὑπόληψις. It will be seen that Freudenthal extracts the same meaning as Simplicius or Themistius, but his construction of the words, though not impossible, is strained and unnatural.

Madvig proposed to bracket νόησις, and this is perhaps the simplest way to ensure that the comparison is between φαντασία and ὑπόληψις. On the other hand, Schneider's proposal to bracket ἡ is a quite inadequate remedy, for αὐτὴ would then mean as in b 15 "by itself." If Schneider supposed the meaning to be "this is not the same as thinking or conceiving," he should have conjectured, as he might perfectly well have done, αὕτη for ἡ αὐτή: cf. *note* on 425 b 7 **αὕτη λευκοῦ**. **τοῦτο μὲν γὰρ τὸ πάθος**, int. τὸ νοεῖν, as I understand the passage; τὸ φαντάζεσθαι, according to others.

b 18. **ἐφ' ἡμῖν ἐστίν.** We are free to picture this or that to ourselves in thought, whenever we please (whether we can exclude an image or a thought from our mind at will is doubtful, nor does A. say that we can). Cf. 417 b 24 διὸ νοῆσαι μὲν ἐπ' αὐτῷ, ὁπόταν βούληται. **πρὸ ὀμμάτων.** Cf. τίθεται πρὸ ὀμμάτων *De Mem.* 1, 450 a 5, 6, where A. uses the phrase in connexion with the process which he there calls νοεῖν: (a 4) καὶ ὁ νοῶν ὡσαύτως, κἂν μὴ ποσὸν νοῇ, τίθεται πρὸ ὀμμάτων ποσόν, νοεῖ δ' οὐχ ᾗ ποσόν.

b 19. **ἐν τοῖς μνημονικοῖς.** Some system of artificial aids to memory, memoria technica, was elaborated at an early date, if we may credit the well-known anecdote about Themistocles. Such a mnemonic art is mentioned by Xenophon, *Symp.* IV. 62 οἶδα δέ σε Ἱππίᾳ τῷ Ἠλείῳ, παρ' οὗ οὗτος καὶ τὸ μνημονικὸν ἔμαθεν· ἀφ' οὗ δὴ καὶ ἐρωτικώτερος γεγένηται διὰ τὸ ὅ τι ἂν καλὸν ἴδῃ μηδέποτε ἐπιλανθάνεσθαι, Cic. *De Or.* II. c. 86, § 351, 87, esp. §§ 357, 358; Claudius Ptolemaeus, περὶ κριτηρίου καὶ ἡγεμονικοῦ, 16; Sext. Emp. *P. H.* II. 222. For A. the locus classicus is *De Insomn.* 1, 458 b 17 sqq. "So, too, in sleep we sometimes think of other things besides the objects mentally imaged. And this anyone would see who should give careful attention and try to remember after getting up. Indeed, cases have occurred in which persons have actually while dreaming seemed to be arranging by rules of mnemonic art the objects presented to them in the dream. For it frequently happens to them to set before the mind's eye, along with the dream, a new image to remember the dream by": 458 b 20 ἤδη δέ τινες καὶ

ἑωράκασιν ἐνύπνια τοιαῦτα οἷον οἱ δοκοῦντες κατὰ τὸ μνημονικὸν παράγγελμα τίθεσθαι τὰ προβαλλόμενα· συμβαίνει γὰρ αὐτοῖς πολλάκις ἄλλο τι παρὰ τὸ ἐνύπνιον τίθεσθαι πρὸ ὀμμάτων εἰς τὸν τόπον φάντασμα. The *τόποι μνημονικοὶ* are mental pigeon-holes in which images (*εἴδωλα*), associated with the facts to be remembered, are supposed to be arranged. See, for illustration of this, the passage from Cic. *De Or.* (l.c.), and the anonymous treatise *Ad Herennium* III., c. 16, where there is an especially full and curious account of these *loci.*

b 20. **δοξάζειν δ' οὐκ ἐφ' ἡμῖν.** Opinion is not in our own power, as is imagining or thinking. In forming opinions, in judging, that is to say, that this is or is not so, we are fettered by facts, which we must take into account. Even an erroneous opinion takes account of facts, though it distorts or mistakes them (cf. Plato, *Theaet.* 186 sq.). There is a special reason for distinguishing *δοξάζειν* from *φαντάζεσθαι*. *Δόξα* and *φαντασία*, as being the nouns corresponding to *δοκεῖ* and *φαίνεται*, which are often synonymous, might themselves be synonymous, and in fact one use of *φαντασία* does seem to correspond with *δόξα*: cf. *Metaph.* 1062 b 33 *τό γε μὴν ὁμοίως προσέχειν ταῖς δόξαις καὶ ταῖς φαντασίαις τῶν πρὸς αὑτοὺς διαμφισβητούντων εὔηθες*, where *ταῖς φαντασίαις* seems to be added as a synonym to bring *ταῖς δόξαις* into relation with the preceding *φαίνεσθαι* and *φαινόμενον* (=*τὸ δοκοῦν ἑκάστῳ* 1062 b 14). For this reference I am indebted to Miss Alford.

b 20. **ἀνάγκη γάρ.** An opinion, a judgment, a proposition must declare either what is true or what is false. The subject is probably *τὸν δοξάζοντα.* A mental picture makes no such declaration.

b 23. **κατὰ δὲ τὴν φαντασίαν.** The noun has here its technical sense, which differentiates the meaning of the phrase from that of 402 b 23: see *note* ad loc. **ὡσαύτως ἔχομεν ὥσπερ ἂν εἰ θεώμενοι.** Cf. Them. (89, 18 H., 164, 15 Sp.) *οὐ συμπάσχομεν οὐδ' ὁτιοῦν, ἀλλ' ὥσπερ ἐν τοῖς πίναξι τὰ γεγραμμένα θεώμενοι πάσχομεν οὐδέν.* We are as wholly unaffected by the mental image as if we were gazing at a scene depicted in a painting. Cf. 403 a 19—21, also 432 b 29—32, where b 30 *οἷον πολλάκις διανοεῖται φοβερόν τι ἢ ἡδὺ* implies imagination (cf. 431 a 16 sq., 432 a 8).

427 b 24—428 a 5. Again, belief has several varieties, *ἐπιστήμη, δόξα, φρόνησις* and their opposites, which we are not here concerned to discriminate. But, as thought (*τὸ νοεῖν*) is distinct from sense-perception, *αἰσθάνεσθαι*, and is presumed to include imagination (*φαντασία*) and belief (*ὑπόληψις*), our best plan is first to fix the meaning of *φαντασία* before we discuss belief [§ 5]. Imagination may be described as a habit or faculty concerned with images, by which we judge and pronounce either truly or falsely. Of such habits or faculties there are four, *αἴσθησις, δόξα, ἐπιστήμη, νοῦς* [from which imagination must accordingly be distinguished] [§ 6].

This passage contains the plan of the discussion which follows to the end of the chapter. A. intends to fix what is meant by *φαντασία* before he passes on to *νοεῖν* proper. This was the more difficult because Plato had put on the word *φαντασία* a sense of his own, *Soph.* 263 E sqq. ΞΕ. *Οὐκοῦν διάνοια μὲν καὶ λόγος ταὐτόν· πλὴν ὁ μὲν ἐντὸς τῆς ψυχῆς πρὸς αὑτὴν διάλογος ἄνευ φωνῆς γιγνόμενος τοῦτ' αὐτὸ ἡμῖν ἐπωνομάσθη, διάνοια;* ΘΕΑΙ. *Πάνυ μὲν οὖν.* ΞΕ. *Τὸ δέ γ' ἀπ' ἐκείνης ῥεῦμα διὰ τοῦ στόματος ἰὸν μετὰ φθόγγου κέκληται λόγος.* ΘΕΑΙ. *'Αληθῆ.* ΞΕ. *Καὶ μὴν ἐν λόγοις αὐτὸ ἴσμεν ὄν.* ΘΕΑΙ. *Τὸ ποῖον;* ΞΕ. *Φάσιν τε καὶ ἀπόφασιν.* ΘΕΑΙ. *Ἴσμεν.* ΞΕ. *Ὅταν οὖν τοῦτο ἐν ψυχῇ κατὰ διάνοιαν ἐγγίγνηται μετὰ σιγῆς, πλὴν δόξης ἔχεις ὅ τι προσείπῃς αὐτό;* ΘΕΑΙ. *Καὶ πῶς;* ΞΕ. *Τί δ' ὅταν μὴ καθ' αὑτὴν ἀλλὰ δι' αἰσθήσεως παρῇ τινὶ τὸ τοιοῦτον αὖ πάθος, ἆρ' οἷόν τε ὀρθῶς εἰπεῖν ἕτερόν τι πλὴν* **φαντασίαν;** ΘΕΑΙ. *Οὐδέν.* ΞΕ. *Οὐκοῦν ἐπείπερ λόγος*

ἀληθὴς ἦν καὶ ψευδής, τούτων δ' ἐφάνη διάνοια μὲν αὐτῆς πρὸς ἑαυτὴν ψυχῆς διάλογος, δόξα δὲ διανοίας ἀποτελεύτησις, φαίνεται δὲ ὃ λέγομεν [int. *φαντασία*] **σύμμιξις αἰσθήσεως καὶ δόξης**, *ἀνάγκη δὴ καὶ τούτων τῷ λόγῳ ξυγγενῶν ὄντων ψευδῆ τε αὐτῶν ἔνια καὶ ἐνίοτε εἶναι.* ΘΕΑΙ. *Πῶς δ' οὔ;* A. returns to the current usage and makes it more precise. We must separate it from sense-perception and yet connect it with it. It is to A., in the main, decaying sense (*ἀσθενὴς αἴσθησις*), whether the retention be voluntary or involuntary: for, if we include the "after-image" (see *note* on 428 a 16) or the mental image produced during the presence of the sensation which produces it (428 b 1—4), it is not always *ἐφ' ἡμῖν*. He dismisses the meaning Plato would fix upon the word, viz. a judgment on present sensibles.

427 b 26. **τἀναντία τούτων.** The opposite of knowledge is ignorance (*ἄγνοια*), and of wisdom, folly (*ἀφροσύνη*), while *δόξα* may be either true or false. **ἕτερος ἔστω λόγος.** Possibly *Eth. Nic.* 1139 b 15 sqq. is intended.

b 28. **τούτου δέ**, int. *τοῦ νοεῖν*.

b 28. **τὸ μὲν φαντασία δοκεῖ εἶναι τὸ δὲ ὑπόληψις.** In every act of thought there is presentation on the one hand and assumption of objective reality on the other. At 403 a 8 sq. two alternatives are presented, *τὸ νοεῖν* is *φαντασία τις* or *οὐκ ἄνευ φαντασίας*: the former would accord with the views attributed to Democritus and other physicists who made no distinction between *νοῦς* and *ψυχή*. Very possibly the latter was a view current at the time, the process of thought being analysed into presentation and judgment upon it. Cf. 428 a 25 *δόξα μετ' αἰσθήσεως* and *note.* A.'s own doctrine is *οὐδέποτε νοεῖ ἄνευ φαντάσματος* 431 a 16 sq., 432 a 8, but at the same time *φάντασμα* is distinct from *νόημα* 432 a 13 sq. The student of post-Aristotelian philosophy will remember that Zeno analysed *αἴσθησις* into *φαντασία* and *συγκατάθεσις*, as mental presentation *plus* an act of assent. If *ὑπόληψις*, the common element of knowledge, opinion and wisdom (*φρόνησις*), is the assumption that the presentation is true, it is very like the mind's assent or belief.

b 29. **περὶ φαντασίας διορίσαντας οὕτω.** The emphasis is on the participle, "we must first define, i.e. mark the limits of, *φαντασία* and then pass on to treat of *ὑπόληψις*," or whatever is the rest of *νοεῖν*.

428 a 1. **καθ' ἥν.** This is added to distinguish the proper use of the term from the applications of it which A. stigmatises as metaphorical, or, it would be more correct to say, due to an extension of the term (see *note* on 428 a 2). Cf. Them. 89, 26 H., 164, 27 Sp. *Ἀποσκευαζόμενοι...λέγομεν (πολλάκις μὲν γὰρ καὶ τὴν αἴσθησιν φαντασίαν καλοῦμεν, πολλάκις δὲ καὶ τὴν νόησιν), περὶ ἐκείνης λέγομεν τῆς φαντασίας, καθ' ἥν φαμεν φάντασμά τι ἡμῖν ἐγγίγνεσθαι, οἷον τύπον τινὰ καὶ μορφὴν τοῦ αἰσθήματος ἐν τῇ ψυχῇ· αὕτη τοίνυν, ἣν κυρίως φαντασίαν καλοῦμεν, μία τις ἂν εἴη τῶν δυνάμεων καὶ τῶν ἕξεων τῶν κριτικῶν αἷς ἀληθεύομεν ἢ ψευδόμεθα.* The antecedent to *ἥν* in our lemma is *φαντασία* itself, or rather *τοῦτο*, the relative *ὃ* being attracted to the gender of *φαντασία*. There is no need to supply either *ἕξις* (or *δύναμις*) or (from 428 b 11) *κίνησις*. The sense to which the word *φαντασία* is here restricted is that of the power of calling up mental images, wherever this occurs, as in recollection, discursive thought and what is called the free play of the constructive imagination.

a 2. **καὶ μὴ εἴ τι.** And not whatever we, by an extension of the term, are in the habit of calling imagination. In this metaphorical or extended use *φαντασία* replaces in turn *ἐπιστήμη, δόξα, αἴσθησις* and *νόησις*. In fact, it may be said to mean *πᾶν τὸ φαινόμενον* or *πάθος ὁτιοῦν τῶν ἐν τῇ ψυχῇ*. The reason is that *φαντασία* means presentation, appearance, and any of the cognitive faculties, or again even sense-perception, may be described as presentative; that is, the

result they produce is something present to the soul, something that appears (ὃ φαίνεται). In fact the wider, or what A. here calls the metaphorical, meaning is based on the felt connexion of φαντασία with φαίνεσθαι, while the more limited meaning is determined rather by the meaning of φαντάζεσθαι and φάντασμα. In English while we use the verb "imagine" in a wide sense and in connexion with any of the cognitive faculties indifferently, we never use it, still less the noun "imagination," of direct presentation to sense. In Latin on the contrary, "arbitrari" and "videri" were technical terms in the witness-box.

a 3. τούτων, i.e. among the various faculties already mentioned in this chapter. Four are enumerated in the next sentence. Imagination is then shown, 428 a 5—b 9, to be identical with no one of the four, but it takes rank with them as a separate faculty (δύναμις).

428 a 5—16. Imagination is not sensation. (1) Imagination occurs when there is neither actual nor potential sensation, e.g. in dreams. (2) Sensation (i.e. potential sensation) is always present; imagination is not. (3) Imagination is not found in all animals, e.g. not in the grub. It would be if it were the same as the actuality of sensation. (4) While sensations are always true, mental images are more often false than true. (5) The view that there is a real distinction between sensation and imagination is confirmed by linguistic usage [§ 7].

In spite of the arguments here adduced as if conclusive, A. sometimes speaks as if this were an open question: *De Insomn.* 1, 458 b 29 εἴτε δὴ ταὐτὸν εἴθ' ἕτερον τὸ φανταστικὸν τῆς ψυχῆς καὶ τὸ αἰσθητικόν. Again, he speaks of an act of memory as an act of perception *De Mem.* 1, 450 b 16—18.

428 a 5. ὅτι μὲν οὖν οὐκ ἔστιν αἴσθησις, int. ἡ φαντασία.

a 6. οἷον ὄψις καὶ ὅρασις. Here ὄψις is the faculty, δύναμις, of sight, the power to see, ὅρασις is actual seeing: cf. 412 b 27 sqq., 426 a 12 sqq.

a 7. φαίνεται δέ τι, "there is an image" = φάντασμά τι ἐγγίγνεται. **μηδετέρου ὑπάρχοντος**, neither potential nor actual sense-perception. An exaggeration: see next *note*. A. might have said that, neither as actual nor as potential, is sensation to be identified with the imagination, which is active, not potential, in dreams: and this is what we find in Philop. 498, 13 διαιρεῖ δὲ τὴν αἴσθησιν εἰς τὸ δυνάμει καὶ ἐνεργείᾳ καὶ λέγει ὅτι ἡ φαντασία οὔτε τῇ δυνάμει αἰσθήσει ταὐτόν ἐστιν οὔτε τῇ ἐνεργείᾳ, τῇ μὲν δυνάμει, ἐπειδὴ ἐνεργοῦμεν σαφῶς ἐν τοῖς ὀνείροις, τότε δὲ δυνάμει ἐστὶν ἡ αἴσθησις καὶ οὐκ ἐνεργεῖ· ἀλλ' οὐδὲ τῇ ἐνεργείᾳ, ἐπεὶ οὐδέποτε ἂν ἐφανταζόμεθα ἐν τοῖς ὕπνοις (νῦν δὲ φανταζόμεθα), ἐπειδὴ δυνάμει ἐστὶν ἐν τοῖς ὕπνοις [int. ἡ αἴσθησις] καὶ οὐκ ἐνεργείᾳ· ὥστε οὐ ταὐτὸν ἡ φαντασία τῇ κατ' ἐνέργειαν αἰσθήσει. Cf. Them. 89, 36 sqq. H., 165, 12 sqq. Sp.

a 8. τὰ ἐν τοῖς ὕπνοις, int. φαινόμενα. In sleep there is potential sensation, the dormant power. There is, however, no actual sensation. In *De Somno* 3, 458 a 28 sleep is thus described: ὁ ὕπνος...τοῦ πρώτου αἰσθητηρίου κατάληψις [arrest] πρὸς τὸ μὴ δύνασθαι ἐνεργεῖν. The sleeper cannot actually see or hear: yet in dreams φαντασία is in active operation: cf. 428 a 16 φαίνεται καὶ μύουσιν ὁράματα. Here, as elsewhere in the chapter, A. is thinking of sight as the principal sense: cf. *De Insomn.* 1, 458 b 31 οὐ γίνεται [int. τὸ φανταστικὸν] ἄνευ τοῦ ὁρᾶν καὶ αἰσθάνεσθαί τι.

a 8 εἶτα...10 ὑπάρχειν. Philop. (498, 22, 25) breaks up this passage into two distinct arguments, the second beginning at a 9 εἰ δὲ τῇ ἐνεργείᾳ: but A.'s own indications εἶτα...εἶτα...ἔπειτα tend to show that he regarded a 8 εἶτα...10 ὑπάρχειν as a single argument. Imagination is neither (*a*) potential sensation, nor (*b*) actual sensation: not potential sensation, for that, the mere faculty of sense, is always present in the animal, it is a distinctive mark or characteristic of animals as contrasted with plants, whereas imagination is not so. The

question whether all animals, or whether certain animals, have or have not imagination is raised several times in the treatise, and even after the provisional solution of 434 a 1—5 it cannot be said to be an invariable accompaniment of animal life. It will be seen that *αἴσθησις* in 428 a 8 must be understood as meaning *δυνάμει αἴσθησις*. Freudenthal would alter *ἀεὶ* to *πᾶσι*, which seems unnecessary with the above explanation: if, that is, *ἀεὶ* = "universally," in all species. As to the verbal contradiction between a 7 *μηδετέρου ὑπάρχοντος* and a 8 *ἀεὶ πάρεστι*, it is the former words, and not the latter, which stand in need of correction.

a 9. εἰ δὲ τῇ ἐνεργείᾳ τὸ αὐτό, int. *ἡ φαντασία ἐστίν*. Here we pass to (*b*), the proof that imagination is not actual sensation: for by *τῇ ἐνεργείᾳ* must be understood *τῇ τῆς αἰσθήσεως ἐνεργείᾳ, τῇ κατ' ἐνέργειαν αἰσθήσει*. See *note* on 428 b 13. "And supposing them [i.e. *φαντασία* and *αἴσθησις*] to be in their activities identical, all animals must have capacity for imagination, whereas this does not appear to be so, e.g. the ant, the bee, the grub do not possess it."

a 10. οἷον μύρμηκι ἢ μελίττῃ ἢ σκώληκι. Thus understood, A. denies to these lower forms not any and every kind of imagination, but imagination as the developed faculty which he is here seeking to define. See *note* on 415 a 10. If A. here denies *φαντασία* to the ant and the bee as well as to the grub, we must bear in mind what he says in 434 a 1 "How can undeveloped or imperfect animals, which have no sensation except touch, have imagination? May we say that as their movements are vague and indeterminate, so, though they possess the powers in question (imagination and desire), it is only in a vague and indeterminate way?" In the *Metaphysics* 980 b 22 sqq. and in the *De Part. An.* II. 2, 648 a 5 sqq., bees are called *φρόνιμα*, or *φρονιμώτερα ἐναίμων πολλῶν*, and in the former passage memory is expressly attributed to them, while from *De Mem.* 1, 450 a 22 sqq. it is clear that the possession of memory implies the possession of *φαντασία*. Cf. *ib.* 451 a 14 sqq., where memory is described as *φαντάσματος, ὡς εἰκόνος οὗ φάντασμα, ἕξις*: further in *Hist. An.* I. 1, 488 a 7 sqq., bees and ants are said to be, like man, *πολιτικὰ ζῷα*. In view of these facts Torstrik refuses to accept the MS. text *οἷον μύρμηκι ἢ μέλιττῃ ἢ σκώληκι*, where the bee and the ant are classed with the grub or larva, the lowest type of animal existence (*De Gen. An.* II. 1, 732 a 16 sqq.): at apis certe et formica, prudentissima animalia, ex tam ignobili societate removenda sunt. Accordingly he reads *οἷον μύρμηκι μὲν ἢ μελίττῃ, σκώληκι δ' οὔ*, for which he finds authority in Them. (*ad loc.*) and Sophonias. The words of Them. are: 90, 6 H., 165, 23 Sp. *φαντασία δὲ τοῖς μὲν τοῖς δ' οὔ, μύρμηκι μὲν ἴσως καὶ μελίττῃ καὶ πολλῷ μᾶλλον κυνὶ καὶ ἵππῳ καὶ ὅσα μετέχει αἰσθήσεως, σκώληκι δὲ οὔ*, Soph. 55, 27 *μύρμηξι μὲν γὰρ καὶ μελίτταις καὶ τοῖς ὁμοίοις, ἔτι δὲ καὶ τοῖς ὑπὲρ ταῦτα, καὶ ἁπλῶς οἷς τισιν οὐκ ἀόριστος οὐδ' ἀνεπίστροφος κίνησις, ἀνάγκη παρεῖναι φαντασίαν, πρὸς ἣν ποιοῦνται τεταγμένην τὴν κίνησιν· σκώληκες δὲ καὶ μυῖαι καὶ ὅσα ἄλλα ἀτάκτως καὶ ἀορίστως ὁρῶνται κινούμενα καὶ μάλιστα τὰ ἐκ σήψεως ἐπετείως γινόμενα ἢ οὐ δοκοῦσιν ὅλως ἔχειν ἢ ἀμυδράν τινα.* Unless Them. is correcting A., he can hardly have had our present text. Soph., on the other hand, is paraphrasing 415 a 10 sq. and drawing upon 434 a 4 sqq., and he says no more than Philop. in his notes on 413 b 22 and 414 b 33: 240, 11 *μύρμηκες μὲν γὰρ καὶ μυῖαι καὶ πολλὰ τοιαῦτα ὅτι φαντασίαν ἔχει, πρόδηλον· ἴσασι γὰρ ἑαυτῶν τὰς καταδύσεις· σκώληκες δέ, ὡς ἐν τοῖς ἑξῆς ἐρεῖ, οὐ φαίνονται φαντασίαν ἔχοντες*, 258, 32 *μύρμηκες μὲν γὰρ καὶ μέλιτται καὶ τὰ τοιαῦτα ὁμολογουμένως μετέχει φαντασίας, σκώληκες δὲ καὶ ἁπλῶς ὅσα τὴν κίνησιν ἄτακτον ποιεῖται, φαντασίας οὐ μετέχει.* Yet that Philoponus had before him in our present passage the text of the MSS. is plain from his comment: 498, 30 *ὁ δὲ σκώληξ καὶ ὁ μύρμηξ εἰ καὶ*

ἔχει φαντασίαν, ἀλλ' ἀμυδρὰν ταύτην ἔχει καὶ ἀδιάρθρωτον. Cf. Simpl. 308, 18 οὐκέτι μέντοι μύρμηκες καὶ μέλισσαι ἢ τὰ ἑρπετὰ ἢ νηκτά, οὐδ' ἔτι μᾶλλον τὰ ἀόριστον ἔχοντα τὴν φαντασίαν and 209, 21 μύρμηκι δὲ καὶ μελίσσῃ καὶ ἐναργεστέρως σκώληκι οὐχὶ ἑκάστου ὡρισμένους, ἀλλὰ κοινότερον τροφῆς, ἢ εἰ καὶ τῆς ἐν τῷδε τῷ ἄλσει, ὡς ἐπὶ μελισσῶν, ἀλλ' οὐχὶ καὶ τῆς ἀπὸ τοῦ ἀτόμου τουδὶ τοῦ ἄνθους. The denial of φαντασία to the bee in particular seems not unnaturally to have puzzled the ancient commentators.

a 11. **εἶτα αἱ μὲν**, int. αἰσθήσεις. **ἀληθεῖς αἰεί.** Cf. *supra* 427 b 12, 418 a 12. Later in the chapter, 428 b 19, A. qualifies this αἰεὶ by the words ἢ ὅτι ὀλίγιστον ἔχουσα τὸ ψεῦδος.

a 12. **ψευδεῖς.** The causes of error will be investigated *infra* 428 b 18—30. Cf. in general *Metaph.* 1024 b 17—28, also first *note* on 402 b 23. As Simpl. remarks, 216, 4 sqq., the error is mainly due to the interval of time which has elapsed between the first presentation and the re-presentation. When every allowance is made, the statement in the text before us is surprising. It has been suggested that it is coloured by reminiscences of the discussion in the *Philebus*, where expectation of the future forms a large element in imaginative pictures, and Plato further contends (40 B) that the hopes and desires of the wicked are false, because they are never destined to be realised. On the whole I prefer the explanation of Simplicius and take αἱ πλείους ψευδεῖς to be a dialectical exaggeration for the more cautious, matter-of-fact πολλάκις ψεύδονται (cf. *supra* a 7 μηδετέρου ὑπάρχοντος). The later sceptics challenged the truth of all φαντασία, whether presentative or representative.

a 13. **ὅταν ἐνεργῶμεν ἀκριβῶς**, i.e. ὅταν ἀκριβῶς τῇ ἐνεργείᾳ αἰσθανώμεθα, when in actual sensation we give careful attention to the thing perceived, in other words, when we observe accurately.

a 14. **τοῦτο**, int. τὸ αἰσθητόν, the sensible object. **ἀλλὰ μᾶλλον.** If, with Torstrik, Madvig and Biehl, we reject the words τότε ἢ ἀληθὴς ἢ ψευδὴς as a gloss, the predicate to be supplied here will be λέγομεν ὅτι φαίνεται.

a 15. **[τότε ἢ ἀληθὴς ἢ ψευδής]**, int. ἐστιν ἡ αἴσθησις presumably. The words are confusing, whether we make αἴσθησις or φαντασία the subject. Again, the consideration thus introduced is irrelevant where, as here, the question is the distinction between αἴσθησις and φαντασία. I therefore concur in bracketing the words.

a 16. **ὁράματα**, "visual sensations." As αἴσθημα, which is τοῦ αἰσθανομένου πάθος *Metaph.* 1010 b 33, is the result of αἴσθησις, perception in general, so ὅραμα is the result of ὅρασις, the special activity of seeing (cf. νόημα, νόησις). The phenomenon alluded to is probably that of the after-image mentioned above 425 b 24 sq. In *De Insomn.* 2, 459 b 5—20 A. says: "Thus the affection is not only in the organs of sense, while they are perceiving, it is in them also when they have ceased to perceive, in their deeper parts as well as at the surface. This is plainly evident in cases where the perception of an object is steadily continued. For when we turn the sense in another direction, the impression follows; as e.g. when we look away from the sun into darkness, for we are unable to see anything owing to the persistence in the eyes of the movement produced by the light. So, too, if we look for a long time at one colour, say white or yellow, the same kind of colour appears on whatever object the sight may be turned. So also if after gazing at the sun or any brilliant object, we close the eyes, we see if we observe closely, straight before us, wherever we happen to look, first the colour of the same sort, then it changes to dark red, then to purple, until it turns to black and disappears. The sensations derived from moving objects also suffer change, e.g. from rivers, especially from

those that have the swiftest current; for objects at rest appear to be moving." It is not necessary, then, to restrict the reference to the phenomena of dreams, as is done by Simpl. 210, 3 sq.

428 a 16—b 9. Again, imagination is not knowledge or thought, faculties which are infallible, for it may equally well be erroneous. It remains to see whether imagination is identical with opinion, which, like it, admits of error. No: for (1) opinion is attended by conviction, which no animals possess, though many of them have imagination. And (2) conviction, which thus attends opinion, presupposes persuasion by argument, and therefore reasoning (λόγος). But no animals reason [§ 8]. Clearly, then, imagination is not opinion accompanied by sensation, nor opinion following upon antecedent sensation, nor a complex or mixture of opinion and sensation. For, apart from the considerations above mentioned, the opinion required for any such combination would have to refer to the same object as the sensation. The result of such a theory would be that imagination is the direct thinking or conceiving of the object perceived [§ 9]. [Such a view, however, is untenable.] Images are often false. A man may have at one and the same time a false mental image and a quite true opinion or conception of the same object, e.g. of the sun. Thus, then, imagination is no one of the four faculties enumerated, nor is it any combination of them [§ 10].

428 a 17. τῶν ἀεὶ ἀληθευόντων. Cf. *Anal. Post.* II. 19, 100 b 5 ἐπεὶ δὲ τῶν περὶ τὴν διάνοιαν ἕξεων, αἷς ἀληθεύομεν, αἱ μὲν ἀεὶ ἀληθεῖς εἰσίν, αἱ δὲ ἐπιδέχονται τὸ ψεῦδος, οἷον δόξα καὶ λογισμός, ἀληθῆ δ' ἀεὶ ἐπιστήμη καὶ νοῦς.

a 18. ἰδεῖν εἰ δόξα, int. ἐστὶν ἡ φαντασία.

a 22 ἔτι πάσῃ μὲν...24 λόγος δ' οὔ. The suspicions which induced Biehl to bracket this sentence come from Torstrik, who, always on the look out for double recensions, was as ready as Philoponus 501, 5 sq. to consider the two arguments separated by ἔτι as substantially identical. There is a similar uncertainty as to whether the sentence beginning with ἔτι in *Pol.* 1262 a 1, or that beginning ἔτι δ' in *De Mem.* 2, 451 a 25, is a repetition of what precedes or an independent argument, adding something new. See Freudenthal, *Rhein. Mus.* N. F. XXIV. (1869), p. 405. In the present passage something new is certainly added, viz. the dependence of πίστις upon λόγος. The first argument stated as a fact that animals are destitute of belief, the second shows the reason for the fact, viz. that belief, being reasoned conviction, implies reason. This is another instance of a sentence in which the μὲν clause is subordinate to a clause with δέ. The suspected words were read by all the Greek commentators: Them. 90, 23—25 H., 166, 17—21 Sp., Simpl. 211, 19—29, Philop. 501, 5 sq., Soph. 118, 37—119, 1.

a 22. ἀκολουθεῖ. This word, like ἕπεται, does not imply sequence in time, but logical concomitance, or a psychical relation of dependence. Cf. ἕποιτ' ἄν, 406 b 4.

a 23. πίστει δὲ τὸ πεπεῖσθαι. πίστις as defined in *Ind. Ar.* 595 b 8 sq. is persuasionis firmitas, sive ea ex argumentis et rationibus, sive ex sensu et experientia orta est, atque eae res quae ad efficiendam eam persuasionem conferunt. Here the word has the former subjective meaning "persuasionis firmitas" and the "belief" is "derived from reasonings." For the belief, based on the evidence of sense, cf. *Phys.* VIII. 8, 262 a 18 ἡ πίστις οὐ μόνον ἐπὶ τῆς αἰσθήσεως ἀλλὰ καὶ ἐπὶ τοῦ λόγου. There cannot be belief without persuasion and, apart from the direct evidence of the senses, there cannot be persuasion without reasoning. On this passage see Kampe, *Erkenntnisstheorie*, pp. 271—273.

a 24. ἐνίοις. Cf. 428 a 9—11. **λόγος δ' οὔ.** Cf. 415 a 7 sqq., 433 a 11 sq., 434 a 5—7.

a 24 φανερὸν τοίνυν...26 φαντασία ἂν εἴη. A. has three Platonic formulae before him, *δόξη μετ' αἰσθήσεως* from *Tim.* 52 A, the other two from the *Sophist.* There seems to be a needless precision in the last of the three, *συμπλοκὴ δόξης καὶ αἰσθήσεως*, following upon *δόξα μετ' αἰσθήσεως*. The reason is to be sought in the language of *Sophist* 264 B (cited above in summary of §§ 5, 6, p. 460) *φαίνεται δὲ ὃ λέγομεν* (i.e. what we mean by the term "*φαίνεται*," or "*φαντασία*," is) *σύμμιξις αἰσθήσεως καὶ δόξης*: in other words, *φαντασία* is with Plato a variety of *δόξα*, judgment. Aristotle however (as W. H. Thompson observes, *Journ. of Phil.* vol. VIII. p. 293) needs the term for another purpose and accordingly brushes Plato's distinction aside. At the same time, quoting from memory, he substitutes *συμπλοκὴ* for *σύμμιξις*. The second formula *δόξα δι' αἰσθήσεως* is also from the *Sophist* (264 A) *ὅταν μὴ καθ' αὑτὴν* [i.e. *τῇ ψυχῇ αὐτῇ καθ' αὑτὴν*] *ἀλλὰ δι' αἰσθήσεως παρῇ τινὶ τὸ τοιοῦτον αὖ πάθος, ἆρ' οἷόν τε ὀρθῶς εἰπεῖν ἕτερόν τι πλὴν φαντασίαν;*

a 26. διά τε ταῦτα, "both for the foregoing reasons," i.e. the reasons urged against the identification of *φαντασία* with *δόξα* or with *αἴσθησις*.

a 27. καὶ δῆλον ὅτι, "and also because it is clear that." Unless we supply *ὂν* with *δῆλον*, thus forming an accusative absolute (in other words, if we supply *ἐστί*), the sentence will be slightly anacoluthic: "and also it is clear" for "and also because it is clear." But A. indulges in this as in other irregularities. For an exactly similar instance see *Phys.* IV. 11, 220 a 17 *διά τε τὸ εἰρημένον* (*τῇ γὰρ μέσῃ στιγμῇ ὡς δυσὶ χρήσεται, ὥστε ἠρεμεῖν συμβήσεται*), *καὶ ἔτι φανερὸν ὅτι κτέ.* Cf. also *note* on 419 b 16. **οὐκ ἄλλου τινός,** "not of anything else, but of the thing perceived."

a 28. λέγω δ'. I mean, if *φαντασία* is a combination of *δόξα* and *αἴσθησις* at all, it is a combination of (for instance) the perception of white with a judgment or opinion relating to the same thing, white, and not to another thing, e.g. good. This is a fuller explanation of the views cited before, 428 a 25, and challenged by A. Trendelenburg proposes to read *εἰ* in place of *ἐκ*: "I mean whether."

428 b 1. τὸ οὖν φαίνεσθαι. Such is the consequence on the theory which A. is criticising, viz. that *φαντασία* is some combination of perception and opinion.

b 2. μὴ κατὰ συμβεβηκός. These words are added to include the qualification pointed out in a 28—31 *supra.* The account given in the *Sophist* comes to this: *φαντασία* is a direct opining of the object given in sensation, direct, not incidental, to exclude the case where the sensation refers to one quality of an object (white) and the opinion to another (good). In other words, *φαίνεταί μοι τοῦτο λευκὸν ὂν* = *δοξάζω τοῦτο ὅπερ αἰσθάνομαι λευκὸν εἶναι* and not *ἀγαθὸν εἶναι*, in which case the opinion would refer *incidentally* to the same object as the sensation: cf. Them. 90, 35 H., 167, 5 Sp. *οὐδὲ τοῦ αὐτοῦ μὲν ὑποκειμένου κατ' ἄλλο δὲ καὶ ἄλλο, οἷον εἰ τὸ ὑποκείμενον εἴη λευκὸν καὶ ἀγαθόν, τὴν μὲν δόξαν εἶναι περὶ αὐτοῦ καθὸ ἀγαθόν, τὴν δὲ αἴσθησιν καθὸ λευκόν· κατὰ συμβεβηκὸς γὰρ τοῦ αὐτοῦ ἡ δόξα τε καὶ ἡ αἴσθησις.*

b 2. φαίνεται δέ, int. *τῷ αἰσθανομένῳ.* This is clear from the example given. Here and in the next line *φαίνεται* is not equivalent to *φάντασμά ἐστι*, in the sense in which it was used, e.g. 428 a 7, but connotes a presentation, impression (or whatever it should be called) which A. regards as a form of *αἴσθησις*. Cf. *De Insomn.* 1, 458 b 28 sqq., 2, 460 b 18 [cited p. 192 in *note* on 402 b 23 **κατὰ τὴν φαντασίαν**]. So the ancient commentators: Them. 91, 2 H., 167, 13 Sp. *ὅταν... ἡ μὲν δόξα ἀληθεύῃ, ἡ αἴσθησις δὲ διαψεύδηται,* Simpl. 213, 15 *ψευδὴς διὰ τὴν αἴσθησιν*

(τοῦτο γὰρ δηλοῖ τὸ φαίνεται καὶ ψευδῆ), Philop. 505, 18 ἡ αἴσθησις ποδιαῖον τὸν ἥλιον ὁρᾷ.

b 3. **ὑπόληψιν.** The view, assumption or conception which the percipient has is correct, but what he opines directly, and not incidentally, does not agree with his perception: it cannot be said of him δοξάζει ὅπερ αἰσθάνεται μὴ κατὰ συμβεβηκός. **ἔχει.** The subject, not expressed, is ὁ ὑπολαμβάνων: cf. *note* on 403 a 22, **ὀργίζηται.**

b 4. **πεπίστευται.** If the reading πεπίστευται δ' εἶναι μείζω were right, the verb would be impersonal. It seems, however, more natural for A. to write πεπίστευται μείζων (int. ἥλιος) or else πέπεισται (int. τις) μείζω. The scribes seem to have felt this, as the variants show (see critical *notes*). **μείζων τῆς οἰκουμένης.** Cf. *Meteor.* I. 8, 345 b 1 εἰ καθάπερ δείκνυται ἐν τοῖς περὶ ἀστρολογίαν θεωρήμασιν, οὕτως ἔχει, καὶ τό τε τοῦ ἡλίου μέγεθος μεῖζόν ἐστιν ἢ τὸ τῆς γῆς, and *De Insomn.* 1, 458 b 28 καὶ ὑγιαίνουσι δὲ καὶ εἰδόσιν ὅμως ὁ ἥλιος ποδιαῖος εἶναι δοκεῖ: also *ib.* 2, 460 b 18.

b 4. **συμβαίνει οὖν.** Here then sensation (b 2, 3 φαίνεται) and opinion (b 3 ὑπόληψιν, b 4 πεπίστευται) relative to the same object are at variance. Upon the theory we are criticising, that of the *Sophist*, how is this to be explained? And how can we combine an opinion which is true with a sensation which is false into that σύμμιξις αἰσθήσεως καὶ δόξης which the theory asserts φαντασία to be? Two explanations suggest themselves. Either the percipient subject without forgetting or conversion by argument must relinquish his former correct opinion, while the object remains unaltered, and exchange it for the false opinion, which conforms to the presentation of sense (this we shall see is impossible); or, if he retains his former opinion at the same time that he δοξάζει ὅπερ αἰσθάνεται, the same opinion is both true and false. A parallel passage is *Anal. Post.* I. 6, 74 b 5 sqq. The syllogism must start from premisses which are not only true, but necessarily true. Unless we can state the reason for the conclusion, τὸ διότι, that is, unless the middle term, by reason of which the conclusion is necessarily true, be predicated as necessary, we have not demonstrated the conclusion. Nor indeed do we know it scientifically. The middle term, not being necessary, may vanish, while the conclusion to which it was supposed to lead abides: 74 b 30 οὐ γάρ ἐστι τοῦτο [the conclusion] διὰ τὸ μέσον· τὸ μὲν γὰρ ἐνδέχεται μὴ εἶναι, τὸ δὲ συμπέρασμα ἀναγκαῖον. ἔτι εἴ τις μὴ οἶδε νῦν ἔχων τὸν λόγον καὶ σωζόμενος, σωζομένου τοῦ πράγματος, μὴ ἐπιλελησμένος, οὐδὲ πρότερον ᾔδει. φθαρείη δ' ἂν τὸ μέσον, εἰ μὴ ἀναγκαῖον. ὥστε ἕξει μὲν τὸν λόγον σωζόμενος σωζομένου τοῦ πράγματος, οὐκ οἶδε δέ. οὐδ' ἄρα πρότερον ᾔδει. εἰ δὲ μὴ ἔφθαρται, ἐνδέχεται δὲ φθαρῆναι, τὸ συμβαῖνον ἂν εἴη δυνατὸν καὶ ἐνδεχόμενον. ἀλλ' ἔστιν ἀδύνατον οὕτως ἔχοντα εἰδέναι. A different case is considered *Anal. Prior.* II. 21, 66 b 19 sqq., viz., a mistaken inference due to a false supposition respecting the premisses of a syllogism, κατὰ τὴν ὑπόληψιν συμβαίνει γίνεσθαι τὴν ἀπάτην: cf. 66 b 29 ἅμα γὰρ εἴσεταί τε καὶ οὐχ ὑπολήψεται ὑπάρχειν.

b 7. **τὴν αὐτήν,** int. δόξαν. By this δόξα Simpl. understood the resulting φαντασία: 213, 6 συμβήσεται τὴν ἐξ ἀμφοῖν κατὰ συμπλοκὴν συστᾶσαν φαντασίαν τὴν αὐτὴν ἅμα τε ἀληθῆ καὶ ψευδῆ γίνεσθαι, εἰ μὴ ἄρα μεταπίπτειν τις καὶ γίνεσθαι ψευδῆ θεῖτο καὶ τὴν δόξαν. But, as Simplicius goes on to say, the false presentation does not become true, nor again does our former true opinion become false, unless by a change either in us who opine or in the object, that is, in the example, the sun. The sameness of the opinion consists in its being the opinion of the same man at one and the same time; and what A. should have said is, "we shall have the same man holding at one and the same time a true and a false opinion regarding the same thing."

b 8. **ψευδὴς ἐγίνετο, ὅτε λάθοι.** Opinions (as we saw) become false instead of true as often as, unknown to the observer, the object observed undergoes some change: as, for instance, when a man who, when last observed, was sitting, has risen up and is standing. In this case the opinion that he is still sitting is no longer true, but false (cf. *Categ.* 5, 4 a 26 sq.). This parenthetical remark rounds off the enumeration of possible grounds for a change of opinion; forgetfulness, conversion by argument and change in the object perceived. Philop. (505, 26 sq.), in deference to *Anal. Post.* I. 6, 74 b 33, 35 *σωζόμενος*, introduces a fourth ground, viz. a change not further specified in the man himself who opines: the observer might approach the object or he might change from health to sickness. It is important, then, to postulate that he, as well as the object, should remain constant. Cf. 422 b 8—10 and *Metaph.* 1010 b 21 *λέγω δ' οἷον ὁ μὲν αὐτὸς οἶνος δόξειεν ἂν ἢ μεταβαλὼν ἢ τοῦ σώματος μεταβαλόντος ὁτὲ μὲν εἶναι γλυκὺς ὁτὲ δὲ οὐ γλυκύς.*

428 b 10—429 a 9. Our own explanation of *φαντασία* assumes (1) that one motion may generate another, (2) that imagination, which is commonly held to be a motion, is not independent of sensation, occurs only in sentient beings and with regard to sensibles and (3) especially that the movement, or rather act, of sensation may generate a subsequent, secondary movement, which must resemble the original movement of sensation. If this be granted, then the subsequent movement postulated satisfies the conditions required. It is dependent on sensation, the possession of it makes its possessor act and be acted upon in various ways; it may be true or false [§ 11]. The reason why it can be true or false is as follows. The subsequent movement, generated by actual sensation, will differ in kind, according to the nature of the sensible object which has produced the original movement, that is, according as the percept is (1) a special sensible quality (*ἴδιον*); (2) a thing which happens to possess such quality (*συμβεβηκός, ᾧ ὑπάρχει τὸ ἴδιον*) or (3) one of the "common sensibles" (*κοινόν*) [§ 12]. The movement and consequently the mental image produced by (1) is true during the presence of the sensible object which produces it. In the images produced by (2) or (3) there may be falsehood or error, especially if the object is perceived from a distance. Hence *φαντασία* may be defined as a movement consequent upon and resulting from the movement of actual sensation [§ 13]. Its name *φαντασία* connects it with *φάος*, light, and therefore with sight, the most important of the senses [§ 14]. The persistence of mental images and their similarity to sense-perception will account for many of the actions of animals, which are without reason, and of men in whom reason is obscured by emotion, disease or sleep [§ 15].

428 b 10. **ἀλλ' ἐπειδή.** This is the first of a series of protases of which the apodosis comes at *εἴη ἂν αὕτη* 428 b 14. So Simpl. 214, 30—37.

b 10. **κινηθέντος τουδὶ κινεῖσθαι ἕτερον ὑπὸ τούτου.** Cf. *Phys.* VIII. 5, 256 a 4 sqq., where the theory of the transmission of motion through a series of *κινοῦντα κινούμενα* or intermediaries is exemplified by the stick in a man's hand which moves the stone. The present application supposes sensation, which is one motion, to generate a secondary or subsequent motion *ἐν τοῖς αἰσθητηρίοις*, which is the mental image, exactly as the motion of the stone is generated by the motion of the stick. The sensible object is the cause of the motion which is sensation; and this latter in turn is the cause of the motion which is *φαντασία*: or, as Them. (92, 11 H., 169, 23 Sp.) puts it, *ὅπερ τὸ αἰσθητὸν τῇ αἰσθήσει, τοῦτο ἡ κατ' ἐνέργειαν αἴσθησις τῇ φαντασίᾳ.*

b 12. **ἀλλ' αἰσθανομένοις.** The participle has a limiting effect, "solely in sentient beings." **ὧν**, int. *τούτων ὧν*, neuter. The genitive is a genitive of

relation. Imagination (we are told) is a movement concerned with those objects which are objects of sensation (*τῶν αἰσθητῶν*).

b 13. **ὑπὸ τῆς ἐνεργείας τῆς αἰσθήσεως**, "caused by the active operation of sensation," or, which is the same thing, "by the sensation in actuality" (*ὑπὸ τῆς ἐνεργείᾳ αἰσθήσεως*). A. uses both forms of expression, but more often the latter, treating *ἐνεργείᾳ*, and so likewise *δυνάμει*, as a kind of indeclinable adjective.

b 14. **καὶ ταύτην**, int. *τὴν κίνησιν*, this subsequent movement. **ὁμοίαν ἀνάγκη**. For the expression cf. *De Mem.* 1, 450 b 15 *εἴ τ' ἐστὶν ὅμοιον* [int. *τὸ φάντασμα*] *ὥσπερ τύπος ἢ γραφὴ ἐν ἡμῖν*. It is true generally that the motion transmitted through intermediaries is specifically one and the same, *φορὰ* through the stick to the stone, *ἀλλοίωσις* through the intervening medium, air or water, in sensation: 419 a 9—31, 434 b 26—435 a 5. In the case before us the stimulation (1) of sense by the external object, (2) of the imaginative faculty by sensation, must be specifically alike, although the former has an external and the latter an internal stimulus, viz. the traces of sensory movements left in the sense-organs, *μοναὶ* 408 b 18: cf. *De Insomn.* 2, 460 b 2, *De Mem.* 1, 450 a 31 *τύπος τις τοῦ αἰσθήματος*. The impression made by a seal serves in *De Mem.* 1, 450 a 32 sqq. to illustrate *μνήμη* exactly as in *De A.* it is used to elucidate *αἴσθησις* 424 a 19 sqq., 435 a 2 sqq.: and this illustration in itself implies the close resemblance of the copy to the original. **εἴη ἂν...15 ἐνδεχομένη**: equivalent to *ἐνδέχοιτ' ἄν*.

b 16. **κατ' αὐτὴν**, i.e. *κατὰ τὴν φαντασίαν*, "in virtue of possessing imagination." We must understand *ἐνδέχοιτο ἂν* from the preceding *εἴη ἂν ἐνδεχομένη* as the predicate to which the infinitives *ποιεῖν* and *πάσχειν τὸ ἔχον* form the subject.

b 17. **τὸ ἔχον**. Its possessor. The neuter singular, as often, in a quasi-collective sense. There is no necessity to supply *τὸ ζῷον* : *τὸ ἔχον*, the possessor, is itself *τὸ ἔμψυχον ζῷον*. See *note* on 403 a 4.

On the following section, 428 b 18—25, Professor Bywater comments as follows. "Aristotle is showing that there are degrees of truth in the report of sense; and his statement, read in the light of the parallels elsewhere (in De Anima II. 6 and III. 1), leaves no room for doubt as to his general meaning. First in order of truth comes our sense of the *ἴδια αἰσθητά*: next after this our sense of the things or substances of which the *ἴδια αἰσθητὰ* are attributes and marks: third, our sense of the *κοινὰ αἰσθητὰ* in these things or substances. As regards the second kind of sense (our consciousness of the presence of a thing or substance), Aristotle's theory is that the objects in this case are only indirectly known by sense; we perceive the sensible quality of whiteness (an *ἴδιον αἰσθητόν*) directly, but that the white thing is the son of Cleon—to take one of his instances—we perceive only indirectly and *κατὰ συμβεβηκός*, because *τούτῳ* [i.e. *τῷ λευκῷ*] *συμβέβηκεν υἱῷ Κλέωνος εἶναι* (III. 1, 425 a 26; comp. II. 6, 418 a 21 *κατὰ συμβεβηκὸς γὰρ τούτου αἰσθάνεται, ὅτι τῷ λευκῷ συμβέβηκε τοῦτο οὗ αἰσθάνεται*). In the order of being the sensible attribute is conceived as the *συμβεβηκὸς* of the substance, but in the order of knowledge the relative position of things is reversed: the sensible attribute is in the latter case the primary fact, the substance the secondary or accessory fact, the *συμβεβηκός*. It will be observed that in the above passage, when he comes to his third point, our perception of the *κοινὰ αἰσθητά*, Aristotle still speaks of the things or substances as *συμβεβηκότα*, but with the explanatory addition of *οἷς ὑπάρχει τὰ ἴδια*; he seems to be aware that he is using the word in an uncommon sense, and that some explanation therefore may be wanted to prevent misconception. Though

the general meaning however is clear enough, the text of the passage as we now have it involves difficulties which have puzzled the commentators from the days of Themistius downwards, and which, it seems to me, no arts of interpretation will enable us to solve" (*Journ. of Phil.* vol. XVII., p. 57). Prof. Bywater proposes to meet these difficulties by the transposition of the words b 24 *ἃ συμβέβηκε τοῖς αἰσθητοῖς* to follow b 19 *δεύτερον δὲ τοῦ συμβεβηκέναι ταῦτα.* This transposition would enable us to give to *συμβεβηκέναι* b 20 a meaning consistent with that of b 23 *συμβεβηκόσιν*. The same end is attained by more violent means if we adopt Torstrik's conjecture *τοῦ ὃ συμβέβηκε τούτοις*, for Torstrik intends *ὃ συμβέβηκε* to refer to the substance or thing regarded as accessory to its attributes. It is also possible to interpret b 20 *συμβεβηκέναι* and b 23 *συμβεβηκόσιν* consistently and yet to give to both words the more usual meaning, viz. that by which a quality or attribute is said to be accessory to a substance or thing. But in that case we must omit the words b 23 *οἷς ὑπάρχει τὰ ἴδια* with Maier: see *Syllogistik des Aristoteles*, I., p. 8 sq., *note* 2. If we are not prepared to purchase consistency by some alteration either in the wording of the received text or the order of the clauses, we are bound to admit that A. has used b 20 *συμβεβηκέναι* of the attributes and b 23 *συμβεβηκόσιν* of the substances themselves, returning in b 24 to the use of *συμβέβηκε* for the attributes. I have taken this latter course myself, though fully aware of the obvious objection urged by Torstrik with his usual acumen: utrumque sane recte dici potest, sed non utrumlibet eodem loco. A. is just as inconsistent when he tries to force quasi-technical meanings upon other words in common use, *λόγος* being a glaring instance. Cf. also the divergent use of *ἔχειν* in *Metaph.* 1072 b 23, 24, 26. But what parallel can be more apposite than the confusing use of *γεῦσις* not only for the faculty and the organ, but also for the object of taste? Yet this occurs in one and the same passage, 422 a 29—34. Both there and here, however, the writer has made his meaning clear, which is his chief concern.

428 b 18. τοῦτο δέ, i.e. its fallibility, *τὸ καὶ ἀληθῆ καὶ ψευδῆ εἶναι τὴν φαντασίαν.* **τάδε,** the considerations he proceeds to enumerate. They should be carefully compared with the account of *αἰσθητὸν* given in *De A.* II., c. 6. The broad outlines are the same. The order of II., c. 6 *ἴδιον, κοινόν, κατὰ συμβεβηκὸς* [int. *αἰσθητὸν*] is abandoned, *κοινὸν* now coming last as being most subject to error. An instructive commentary is also furnished by *Metaph.* 1010 b 2—26, where sensible qualities as *αἰσθητά*, whether *ἴδια* or *κοινά*, are clearly distinguished from things or substances. Cf. Torstrik, pp. 175 sq.

b 19. ὅτι ὀλίγιστον, "the least possible." Cf. *supra* 427 b 11 sq., *De Sensu* 4, 442 b 8 *περὶ δὲ τῶν ἰδίων οὐκ ἀπατῶνται*, *Metaph.* 1010 b 2—26. A. is there criticising the maxim of Protagoras. It is strange, he has remarked, that difficulties should be raised over such questions as whether the magnitude and colour of objects are what they appear to be at a distance or when near, in sickness or in health; whether the weight of an object is what it appears to be to a weak or to a strong man; whether reality belongs to our waking hours or to our dreams. Our own actions disprove our doubts. Again, with respect to sensations in the future, as Plato pointed out (*Theaet.* 178 C, 171 E), the opinion of the expert is decisive and valid. A. then proceeds: "Again, when we come to the senses themselves, their verdict on an object is not so authoritative when the object lies outside of their domain as when it is a special sensible, nor if pronounced by a neighbouring sense is it so authoritative as if it came from the appropriate sense: it is sight, not taste, which pronounces upon colour, and taste, not sight, which pronounces upon flavour. But none of the senses reports at the same time about the same object that it both has and

has not a given quality [e.g. that it is at once sweet and not sweet]. Even at different times no one ever doubted about the sensations, but solely about the object to which they belong. The same wine, if it has undergone a change, or if there has been a change in the bodily health of the person who tastes it, may at one time appear sweet and at another not; whereas the flavour of sweet as sweet, when present, never changes, but the sensation which it stimulates is always true and, in order to be sweet and to stimulate this sensation, the object must have certain definite qualities": (1010 b 14) *ἔτι δὲ ἐπ' αὐτῶν τῶν αἰσθήσεων οὐχ ὁμοίως κυρία ἡ τοῦ ἀλλοτρίου καὶ ἰδίου ἢ τοῦ πλησίον καὶ τοῦ αὐτῆς, ἀλλὰ περὶ μὲν χρώματος ὄψις οὐ γεῦσις, περὶ δὲ χυμοῦ γεῦσις οὐκ ὄψις· ὧν ἑκάστη ἐν τῷ αὐτῷ χρόνῳ περὶ τὸ αὐτὸ οὐδέ ποτέ φησιν ἅμα οὕτω καὶ οὐχ οὕτως ἔχειν. ἀλλ' οὐδ' ἐν ἑτέρῳ χρόνῳ περί γε τὸ πάθος ἠμφισβήτησεν, ἀλλὰ περὶ τὸ ᾧ συμβέβηκε τὸ πάθος* [the object, i.e. substance, to which the quality belongs]. *λέγω δ' οἷον ὁ μὲν αὐτὸς οἶνος δόξειεν ἂν ἢ μεταβαλὼν ἢ τοῦ σώματος μεταβαλόντος ὁτὲ μὲν εἶναι γλυκὺς ὁτὲ δὲ οὐ γλυκύς· ἀλλ' οὐ τό γε γλυκὺ οἷόν ἐστιν ὅταν ᾖ, οὐδεπώποτε μετέβαλεν, ἀλλ' αἰεὶ ἀληθεύει περὶ αὐτοῦ, καὶ ἔστιν ἐξ ἀνάγκης τὸ ἐσόμενον γλυκὺ τοιοῦτον.* The qualification introduced in our passage, *ὅτι ὀλίγιστον*, must be understood with the more unguarded statements on this point elsewhere, in particular 418 a 12—16.

b 19. τοῦ συμβεβηκέναι ταῦτα, int. *ἡ αἴσθησίς ἐστι.* 'Secondly, perception is of the fact that these *ἴδια* are accidents, *τοῦ συμβεβηκότα εἶναι ταῦτα.* That is to say, we perceive (as A. would say; at any rate, we infer) that there are things of which the special qualities (*ἴδια*) are accidents.

Thus understood, the text appears to me sound. The proposals for change proceed not only from a desire to secure consistency in the meaning of *συμβεβηκέναι*, but also from the assumption that A. could not use *συμβεβηκέναι* absolutely in the sense indicated, and that a dative must be supplied or understood. Prof. Bywater secures this dative by his transposition and would read in b 19 *τοῦ συμβεβηκέναι ταῦτα, ἃ συμβέβηκε* **τοῖς αἰσθητοῖς**. Earlier still Torstrik condemned the vulgate b 19 *δεύτερον δὲ*...20 *ταῦτα* as absurd. He states his grounds as follows (p. 175): Loquitur Ar. de re colori vel alii qualitati sensili subiecta: si enim album videmus, dicimus nos nivem videre vel cygnos vel tentorium, quamquam in eâ re facile erramus: (b 21) *ὅτι μὲν γὰρ λευκόν, οὐ ψεύδεται, εἰ δὲ τοῦτο τὸ λευκὸν ἢ ἄλλο τι, ψεύδεται.* Haec vero sententia non sic potest dici, sensum esse *τοῦ συμβεβηκέναι ταῦτα*: nam *τὸ συμβεβηκέναι* non est obiectum sensûs, sed intellectûs, sicut ceterae notiones abstractae. Here I think Torst. is in error. If A. believed that it is by sense that we perceive, not only *τὰ κοινά*, but the difference between two sensibles (426 b 14 sq.), he would have no difficulty in assuming *αἴσθησις τοῦ συμβεβηκέναι τὰ ἴδια*, for difference and magnitude are just as much "notiones abstractae" as the conception of the thing or substance to which the *ἴδια* are referred as attributes and accidents. The divergence of view between Plato and A. on this point is notorious: see *notes* on 418 a 17, 426 b 15. Torst.'s own conjecture *τοῦ ὃ συμβέβηκε τούτοις* is based upon the variant of cod. X *τοῦ συμβεβηκότος*, the Aldine edition *τοῦ ᾧ συμβέβηκε καὶ ταῦτα*, Themistius 93, 10 H., 171, 19 sq. Sp. *δεύτερον δὲ τῶν ὑποκειμένων τοῖς ἰδίοις καὶ οἷς ἐκεῖνα συμβέβηκε* and the fact that codd. L and E have *τῷ* for *τοῦ*. Thus he, too, is in search of a dative to go with *συμβεβηκέναι*. But there is no more need of a dative here than in *Metaph.* 1007 a 21 *πάντα γὰρ ἀνάγκη συμβεβηκέναι φάσκειν αὐτοῖς*, "they are bound to call all things accidents," even *οὐσία* and the *τί ἦν εἶναι*, as the context shows. It would seem, then, that the received text makes A. say exactly what Torstrik wishes him to say *τοῦ ὃ συμβέβηκε τούτοις*, and in a far neater and more idiomatic way: to perceive that the *ἴδια* are attributes implies that there is a substance of which they are

attributes or accidents, εἰ μὴ χωριστὰ τὰ πάθη ἀλλήλων. This, the more common and natural use of συμβεβηκέναι, is not only in accord with ἃ συμβέβηκε τοῖς αἰσθητοῖς b 24, but also with *Metaph.* 1010 b 20 sq. τὸ ᾧ συμβέβηκε τὸ πάθος cited in *note* on 428 b 19 **ὅτι ὀλίγιστον**: see Bonitz *ad loc.*, p. 207.

b 20. καὶ ἐνταῦθα ἤδη. It is when we come to this second kind of perception, involving reference of an ἴδιον to something of which it is an accident, that serious error becomes possible.

b 21. ὅτι μὲν γὰρ λευκόν, int. πάρεστι or τὸ αἰσθητόν ἐστι. The subject to ψεύδεται is, again, indefinite, ὁ αἰσθανόμενος or τις, and I should supply τὸν αἰσθανόμενον as subject to the infinitive διαψεύδεσθαι in the preceding line. As to the fact that there is something white before him, or that that which he sees is white, a man, generally speaking, cannot be mistaken. Error arises on the question whether the white object is this or that thing or person, e.g. the son of Cleon or someone else. Cf. 418 a 15 sq., 430 b 29 sq.

b 22. τρίτον δὲ τῶν κοινῶν, int. ἡ αἴσθησίς ἐστι.

b 23. τοῖς συμβεβηκόσιν...τὰ ἴδια. This must mean the substances, ὑποκείμενα, whether things or persons, to which the qualities perceived by the special senses belong. They are called συμβεβηκότα either as being κατὰ συμβεβηκὸς αἰσθητά (cf. 418 a 20 sqq.) or because, in the words of Professor Bywater (*loc. cit.*), "in the order of being the sensible attribute is conceived as the συμβεβηκός of the substance, but in the order of knowledge...the sensible object is the primary fact, the substance the secondary or accessory fact, the συμβεβηκός." If we leave the text unaltered, we must assume that A. has changed his point of view from the order of being to the order of knowledge.

b 24. ἃ συμβέβηκε τοῖς αἰσθητοῖς. Torstrik and Biehl bracket these words. Professor Bywater (*Journ. of Phil.*, l.c.) prefers to transpose them. If they are omitted here, the parenthetical remark introduced by λέγω δ', b 23, includes no more than λέγω δ' οἷον κίνησις καὶ μέγεθος. If we retain the words in their traditional place, we can account for their presence by the fact that, in describing τὰ κοινὰ as ἑπόμενα τοῖς συμβεβηκόσιν, οἷς ὑπάρχει τὰ ἴδια, A. is conscious of having employed an unusual phrase, not easily intelligible, and only adopted to make clear the double chance of error in such conceptions as magnitude and motion: (1) because they are not ἴδια and not directly perceived by any single special sense (cf. 425 a 15 with *notes*) and (2) because they are attributes of κατὰ συμβεβηκὸς αἰσθητά, i.e. of things or substances themselves not directly perceived but, as we should say, only inferred from the direct perception of special sensible qualities. But, having so described them, as soon as he comes to the examples, A. is glad to revert to the more ordinary expression that these κοινά, as well as τὰ ἴδια, συμβέβηκε τοῖς αἰσθητοῖς, are attributes of things or substances. By τοῖς αἰσθητοῖς we should naturally understand τοῖς ἰδίοις, which are αἰσθητὰ in the strict and proper sense of the term, 418 a 24 sq. But, though the common sensibles accompany the special sensibles, ἕπεται, ἀκολουθεῖ, it is the substances in which the special sensibles inhere that, as explained above, are properly said συμβεβηκέναι in this connexion, and not the common sensibles. Hence Torst., following Simpl., is driven to understand by τοῖς αἰσθητοῖς the things or substances incidentally perceived. Cf. Simpl. 216, 14 ὑπάρχει δὲ τὰ κοινὰ ὥσπερ καὶ τὰ ἴδια συμβεβηκότα, ὄντα ἄμφω τοῖς κατὰ συμβεβηκὸς αἰσθητοῖς, ἅπερ αἱ ὑποκείμεναι οὐσίαι, Torst. (p. 176): possunt quidem haec aliquo modo defendi, si quis dicat τὰ αἰσθητά hoc loco non esse τὰ ἴδια (v. c. colorem) sed subiecta οἷς ὑπάρχει τὰ ἴδια (v. c. hominem colore praeditum). I myself incline to the latter view.

b 24. περὶ ἅ. This remark is parallel to that beginning καὶ ἐνταῦθα above.

The reference of the relative is to τῶν κοινῶν, the words λέγω δ' οἷον κίνησις καὶ μέγεθος forming a parenthesis. περὶ ἃ is here equivalent to καὶ περὶ ταῦτα, just as in 430 b 18 I take ὃ = καὶ τοῦτο.

b 25. μάλιστα. The chance of error is greatest in dealing with τὰ κοινά, greater than in referring qualities or attributes to a thing or substance: cf. 425 b 6—11. ἡ δὲ κίνησις ἡ ὑπὸ τῆς ἐνεργείας γινομένη, that is to say, (according to 428 b 10 sqq.) the secondary or subsequent movement which constitutes φαντασία. It is here described as due to the activity (of sensation). Cf. *supra* 428 b 13 κίνησιν ὑπὸ τῆς ἐνεργείας τῆς αἰσθήσεως. If τῆς αἰσθήσεως, which is found in the MSS. after διοίσει, be retained, it must in any case be constructed with ἐνεργείας and would be more in place if transposed to follow that word.

b 26. διοίσει, "will vary," that is, will assume different forms, according as it proceeds from one or another of the three kinds of percept: Dicit igitur διοίσει, h. e. discrimen habebit: non additur a qua tandem re differat ἡ φαντασία, quia non id quaeritur, sed quae sint τῆς φαντασίας ipsius species ac differentiae (Torstrik p. 177). M. Rodier translates: "Par suite, en ce qui concerne le mouvement produit par la sensation en acte, c'est-à-dire en ce qui concerne l'imagination, celui qui résultera de chacune de ces trois sortes de sensations, différera de celui qui résultera de chaque autre." The meaning and connexion of the passage are best seen from Alex. *De An.* 70, 5 ἡ μὲν οὖν περὶ τὸ ἐγκατάλειμμα τὸ ἀπὸ τοῦ καθ' αὑτὸ αἰσθητοῦ σωζόμενον γινομένη ἐνέργειά τε καὶ φαντασία ὁμοίως τὸ ἀληθές τε καὶ τὸ ψεῦδος ἕξει τῇ αἰσθήσει ἐφ' ᾗ γίνεται. διὸ αἱ πλεῖσται τῶν τοιούτων καὶ περὶ τὰ τοιαῦτα φαντασιῶν ἀληθεῖς, αἱ δὲ περὶ τὰ ἐγκαταλείμματα ἀπὸ τῶν κοινῶν τε αἰσθητῶν καὶ κατὰ συμβεβηκὸς πολὺ τὸ ψεῦδος ἔχουσιν. No genitive need go with the verb of our lemma and, least of all, τῆς αἰσθήσεως. In what the φαντασία will vary A. does not expressly say, but if we bear in mind that he has been showing that there are degrees of truth in the reports of sense and goes on to show that there are similar degrees of truth and falsehood in the φαντασίαι, it seems clear that the difference referred to must be difference of truth and falsehood. Various other interpretations have been proposed. (1) Philop. understands διοίσει τῶν αἰσθήσεων πασῶν ἀφ' ὧν γέγονεν (514, 19), imagination will be a movement distinct from sense, but this point has been laboured in 428 a 5—16: cf. 428 b 10 sqq. (2) Much the same sense is obtained by Bekker's purely conjectural reading τῆς ἀπὸ τούτων τῶν τριῶν αἰσθήσεων, "further, the movement which results from the activity due to these three sorts of sense will be distinct from the sensation which causes it." (3) Christ proposed ᾗ ἀπὸ τούτων τῶν τριῶν αἰσθήσεων, "in so far as it [the movement, i.e. imagination] results from these three sorts of sense."

b 27. ἡ ἀπὸ τούτων. From Torstrik's masterly note, p. 177, it is certain that Bekker's reading τῆς ἀπὸ τούτων was due to inadvertence. It is found in none of the MSS. which he was collating, but is the reading, doubtless conjectural, of the Basileensis, in a copy of which he recorded the variants of those MSS.

b 27. τῶν τριῶν αἰσθήσεων, viz. (1) perception of sensible qualities proper to the several separate senses (ἴδια); (2) perception of substances (things or persons) in which such sensible qualities inhere as accidents or attributes; (3) perception of attributes, which, though belonging to such substances, are not perceived by one sense only, but are indirectly perceived by several or all of the single special senses, directly only by sense as a whole (κοινά). ἡ μὲν πρώτη, int. κίνησις, i.e. φαντασία, of the first sort, that is, derived from perception of the first sort. παρούσης τῆς αἰσθήσεως, "so long as the original sensation lasts." After it has passed away, the subsequent movement which it set up in

the sense-organs, i.e. the φαντασία corresponding to it, becomes gradually weaker and may thus eventually cease to be true.

b 28. αἱ δ' ἕτεραι, int. κινήσεις. **καὶ παρούσης καὶ ἀπούσης,** int. τῆς αἰσθήσεως.

b 30 εἰ οὖν...429 a 2 γιγνομένη. The critical notes disclose considerable variations in the authorities. We may at once set aside the text of Bekker and Trend., in which Torst. has proved that μὴ before b 30 φαντασίαν has no manuscript authority, but is merely a printer's error in Sylburg's edition, on the margin of which, as well as on that of the Basileensis, Bekker and Brandis entered the results of their collations. The first point to decide is whether we shall follow cod. E in reading μὲν after μηθὲν or the six manuscripts of the other family which omit μέν: miror protasin, ad inanem verborum speciem factam (Trend.). Then again, E has μηθὲν μὲν ἄλλο ἔχοι ἢ τὰ εἰρημένα ἡ φαντασία, while most other MSS. transpose this ἢ to follow εἰρημένα and only cod. W has both ἢ and the article ἡ before φαντασία. The divergence of the two families may be explained if the omission of μὲν is an oversight on the one side and if, at the same time, as Torst. suggests, the scribe of E, with equal carelessness, has anticipated ἤ. Doubtless the text of E, adopted by Biehl, affords a good sense: "if imagination has no other characteristic than those already specified": and I have been content to follow it in the translation, though the words ἢ τὰ εἰρημένα certainly seem superfluous. But the alternative given by the other MSS., "if imagination alone has the given characteristics," seems on the whole better. Moreover, with the reading of E, ἡ φαντασία is indispensable to the first clause. Yet this ἡ (or, according to most other MSS., ἢ) φαντασία is not above suspicion. Philop. appears not to have read ἢ φαντασία in his text after εἰρημένα: (514, 31) εἰ οὖν μηδὲν ἄλλο ἔχει τὰ εἰρημένα, τουτέστι πλὴν φαντασίας, ἡ δὲ φαντασία ἐστὶν ἡ ἔχουσα τὰ λεχθέντα, ἅτινα καὶ τὴν οὐσίαν αὐτῆς συμπληροῦσι, λέγω δὴ τὸν ὁρισμόν, δῆλον ὅτι κτέ. If it were certain that such an omission of ἢ φαντασία rested on good authority, it would be tempting to extrude ἢ φαντασία, τοῦτο δ' ἐστὶ τὸ λεχθὲν as a marginal gloss. However, if Philop. had not ἢ φαντασία in his text, he nevertheless had the following clause τοῦτο δ' ἐστὶ τὸ λεχθέν. Torst. urges that τοῦτο can refer neither to τὰ εἰρημένα nor to φαντασία. But, if ἢ φαντασία were absent from the original text, τοῦτο might very well denote ἡ φαντασία, as Philop. understood it, ἡ δὲ φαντασία **ἐστὶν ἡ ἔχουσα τὰ λεχθέντα,** where the words emphasised are the natural variations of paraphrase and seem hardly to justify Torst.'s τοῦτο δ' ἔχει: in fact, ἔχειν τὰ εἰρημένα and εἶναι τὸ λεχθὲν come to about the same. Or again, it is just conceivable that τοῦτο may replace τὸ μηδὲν ἄλλο ἔχειν τὰ εἰρημένα (or ἢ τὰ εἰρημένα, if that was the genuine reading). It was stated b 11 that imagination δοκεῖ, is held to be, κίνησίς τις, intimately conjoined with αἴσθησις etc. and b 15 such an hypothetical movement, αὕτη ἡ κίνησις, is further described. All that remains is to identify what has been thus described with the faculty of which we are in quest. This may well be the sense of the words τοῦτο δ' ἐστὶ τὸ λεχθέν, which would then mean "and if this (viz. φαντασία) is what some have described it as being," referring back to b 11 δοκεῖ. Cf. Them. 93, 21 H., 176, 6 Sp. εἰ τοίνυν ὅτι μὲν ἔστιν ἡ φανταστικὴ δύναμις τῆς ψυχῆς, ἅπασι φανερόν, οὐδεμίαν δὲ ἄλλην τῶν διηριθμημένων οὖσαν τοιαύτην ὁ λόγος ἐξεῦρεν, λείπεται ταύτην εἶναι ἣν ἡμεῖς φαμὲν κίνησιν τῆς ψυχῆς ὑπὸ τῆς αἰσθήσεως τῆς κατ' ἐνέργειαν γινομένην. It was probably the first clause in this extract from Them. which inspired Biehl to change the accent from ἐστι to ἔστι: "and if this which has been described really exists."

b 30. τὰ εἰρημένα, the above-mentioned marks or characteristics, viz. dependence on sensation, presence in living beings and fallibility.

429 a 1. ἡ φαντασία ἂν εἴη. Cf. *De Insomn.* 1, 459 a 17 ἔστι δ' ἡ φαντασία ἡ ὑπὸ τῆς κατ' ἐνέργειαν αἰσθήσεως γινομένη κίνησις.

a 2. ἡ ὄψις μάλιστα αἴσθησίς ἐστι. Cf. *De Sensu* 1, 437 a 3 sqq., *Metaph.* 980 a 21 sqq., Plato, *Phaedrus* 250 D and *Timaeus* 47 A.

a 4. διὰ τὸ ἐμμένειν, int. τὰς κινήσεις, i.e. τὰς φαντασίας. Cf. 425 b 24 sq. ἔνεισιν...ἐν τοῖς αἰσθητηρίοις, 408 b 18.

a 5. κατ' αὐτάς, i.e. κατὰ τὰς φαντασίας. Cf. 415 a 11, *Metaph.* 980 b 25 τὰ μὲν οὖν ἄλλα ταῖς φαντασίαις ζῇ καὶ ταῖς μνήμαις, ἐμπειρίας δὲ μετέχει μικρόν.

a 6. οἷον, scilicet: and so a 8. See *note* on 415 a 22.

a 7. πάθει, in the narrower sense (see *note* on 403 a 16), approximating to ὀρέξει, or at least ἐπιθυμίᾳ. This would include appetite and pleasure and pain, as well as what we call emotions, such as anger and fear.

a 9. διὰ τί. Mention has been made both of the efficient cause (that is, the previous motion of sensation) and of the final cause, namely, that animals may be enabled, reason apart, to act and be acted upon in various ways. The definition obtained satisfies the canons laid down 402 b 21—25, 413 a 13—16.

CHAPTER IV.

Hitherto the order has been, in general, to proceed from lower faculties to higher and from the most widely diffused to the least common. In accordance with this principle locomotion, being far more common in the animal world than intellect, should have been taken before it. The departure from this order is due to A.'s desire to treat the two discriminating faculties, intellect and sense, together. A further reason is that intellect, being one of the causes to which animal locomotion is ascribed, requires to be treated first.

For the comments of Theophrastus on III., cc. 4 and 5 see the Appendix.

429 a 10—b 9. Coming now to intellect, the part of the soul concerned with knowledge and thought, we must consider how it differs from other faculties and how thinking comes about [§ 1]. Thought, assuming that it is analogous to perception, implies that mind is acted upon by the object of thought, or that something of the sort happens [§ 2]. If so, the mind must be impassive, receptive of form and potentially like its object, without actually being its object. In order to think all things, it must, in the words of Anaxagoras, be unmixed. Allow the mind to have any form of its own, and the intrusive presence of this form disqualifies the mind from receiving any form from an external object. Mind is thus a mere capacity. Before it thinks, it is in actuality nothing [§ 3] and, consistently with this, it must, further, be incorporeal. Any admixture with the body would invest it with some one or other sensible quality and would necessitate a special bodily organ, which, in fact, does not exist. The soul has been described as a place of forms or ideas. This is just what the thinking soul is potentially, not actually [§ 4]. The impassivity of intellect is different from the impassivity of sense. Sense becomes fatigued and the sense-organ fails when the sensible object has been too overpowering. But with the mind this is not so. Occupation with the highest intellectual objects does not disable or unfit it from subsequently contemplating what is less abstract, mind being independent of a bodily organ [§ 5]. Even after the mind has become all things, it is still in some sense a mere capacity; a capacity, however, resembling that which enables the savant to exercise his knowledge at will: and at this stage the mind can know itself.

429 a 10. περὶ δὲ τοῦ μορίου. From consideration of what in the *Ethics* is called τὸ ἄλογον, we pass now definitely to τὸ λόγον ἔχον. In calling νοῦς a part of the soul A. is, as usual, condescending to popular language. All mention of "parts" of the soul must be provisional: see 432 a 22 sqq.

a 10 ᾧ γινώσκει τε...11 καὶ φρονεῖ. The word γινώσκει is not in itself peculiar to intellect, but applies to sense as well: cf. 427 a 21 γνωρίζει, *De Gen. An.* I. 23, 731 a 33 αἴσθησιν γὰρ ἔχουσιν, ἡ δ' αἴσθησις γνῶσίς τις. It is the addition of φρονεῖ that discriminates intellect from the other cognitive faculty, viz. sense; for, as we saw 427 b 6 sq., φρονεῖν is not the same as αἰσθάνεσθαι. According to Themistius and Simplicius, however, the words of the lemma point to the theoretical and practical activity of soul. For the division cf. *infra* 433 a 14 νοῦς δὲ ὁ ἕνεκά του λογιζόμενος καὶ ὁ πρακτικός· διαφέρει δὲ τοῦ θεωρητικοῦ τῷ τέλει and *Eth. Nic.* 1103 b 26 sqq., 1139 a 26 sqq. But the terms are ill-chosen, if this division is intended by A. Cf. *De Sensu* 1, 437 a 1 cited in *note* on 434 b 26 and 437 a 2 ἥ τε τῶν νοητῶν ἐγγίνεται φρόνησις καὶ ἡ τῶν πρακτῶν.

a 10. ἡ ψυχή. A strict adherence to the precept of 408 b 13 sqq. would require the substitution of ὁ ἄνθρωπος for ἡ ψυχή. So Them. 93, 32 H., 172, 23 Sp. paraphrases ᾧ χρώμεθα εἰς θεωρίαν καὶ πρᾶξιν. The soul is properly the instrument of thought as well as of sensation and vegetative life to the animate compound, man: 414 a 12 ἡ ψυχὴ δὲ τοῦτο ᾧ ζῶμεν καὶ αἰσθανόμεθα καὶ διανοούμεθα πρώτως. Cf. also A.'s use of ψυχή in 430 a 13, 430 b 15, 431 a 14.

a 11. χωριστοῦ. The qualifying clause a 11 εἴτε χωριστοῦ...a 12 λόγον is elicited by the term μόριον: cf. 413 b 13 πότερον δὲ τούτων ἕκαστόν ἐστι ψυχὴ ἢ μόριον ψυχῆς, καὶ εἰ μόριον, πότερον οὕτως ὥστ' εἶναι χωριστὸν λόγῳ μόνον ἢ καὶ τόπῳ. The case of νοῦς was specially reserved 413 b 24—27 (cf. 415 a 11). Hence χωριστοῦ must mean "separable from the other parts or faculties of soul." Two questions arise: (1) Is νοῦς separable or inseparable? (2) If separable, is it separable spatially (cf. τόπῳ καὶ ἀριθμῷ 427 a 5) or only in thought? If νοῦς is χωριστὸς κατὰ μέγεθος **τῶν ἄλλων μορίων** it follows that it is also χ. τοῦ σώματος and capable of independent existence. Cf. 403 a 5—16. The interpretation of χωριστοῦ given above agrees with that of Plutarch of Athens apud Philoponum 520, 34 sqq. and accords with the language of *Eth. Nic.* 1102 a 28 ταῦτα δὲ (int. τὸ ἄλογον and τὸ λόγον ἔχον) πότερον διώρισται καθάπερ τὰ τοῦ σώματος μόρια καὶ πᾶν τὸ μεριστόν, ἢ τῷ λόγῳ δύο ἐστὶν ἀχώριστα πεφυκότα. Cf. 429 b 16 ἤτοι χωριστῷ ἢ κτέ. and 431 b 17—19. Some further consideration of the question is brought in at 434 b 3 sqq. in connexion with the necessity of αἴσθησις in animals.

a 12. κατὰ μέγεθος expresses the same meaning as κατὰ τόπον, spatially, locally, as one physical thing and its accidents are separate from another. Either phrase or both can be opposed to λόγῳ or κατὰ λόγον: cf. 403 a 11, 413 b 15, 427 a 4 sq., 432 a 20, 433 b 24 sq. **διαφοράν**, characteristic quality, distinguishing mark. Cf. 413 b 19, *note*. It may be suggested that in 429 a 10—b 9 A. deals mainly with the distinctive attributes of νοῦς and that at 429 b 10 he passes to the process of thinking; but nature and operation, operation and object are so closely blended that no hard and fast line is possible.

a 14. ὥσπερ τὸ αἰσθάνεσθαι. The two processes, which are not identical, according to 427 b 8 sqq., b 27, are assumed to be analogous: cf. 427 a 8 sq., 431 b 28—432 a 3. Whenever αἰσθάνεσθαι can be interpreted by κρίνειν, there is some analogy with thought, but this is most clearly seen in the perception of difference and identity and the other operations, like self-consciousness, which A. has ascribed to *sensus communis*. In what follows A. begins with points of

community, but also takes notice of differences, e.g. 429 a 29 sqq., which indeed have already come up 417 b 16—29, a passage which ends with a reference to further discussion, presumably in the present chapter. In one respect there is a formal difference in the treatment of νοῦς. In II., c. 6 various meanings of αἰσθητὸν were carefully distinguished. There is no similar preliminary elucidation of νοητόν, unless it can be indirectly derived from the not very satisfactory discussion 427 b 6—b 29.

a 14. ἢ πάσχειν τι ἂν εἴη, int. τὸ νοεῖν. See *notes* on 410 a 25, 427 a 20. Cf., however, Simpl. 223, 40 τὸ μὲν γὰρ τὶ πρόσκειται τῷ πάσχειν, ἵνα μὴ φθαρτικὸν τὸ πάσχειν ἀκούσωμεν: cf. 417 b 2 sqq. For intellect, as well as for sense, the modification expressed by πάσχειν is not φθορά τις ὑπὸ τοῦ ἐναντίου, but a σωτηρία τοῦ δυνάμει ὄντος. It was agreed, however, in default of a better term, to use the word πάσχειν to express this, 418 a 2 sq. **ὑπὸ τοῦ νοητοῦ.** Cf. *De Part. An.* I. 1, 641 a 36 ὁ γὰρ νοῦς τῶν νοητῶν...τῆς γὰρ αὐτῆς [int. ἐπιστήμης] περὶ νοῦ καὶ τοῦ νοητοῦ θεωρῆσαι. **ἤ τι τοιοῦτον ἕτερον.** The analogy between sense and intellect must not be pressed too far. The latter has no bodily organ, 429 a 26 sq., so that the resemblance between them is incomplete. Cf. also 429 a 29 sqq.

a 15. ἀπαθές. See *Ind. Ar.* 72 a 36—40 τὸ μὴ πεπονθός...ita...429 a 15 significare videtur μηδέν πω πεπονθός. Applied to intellect, the term means (1) not having yet suffered, i.e. devoid of the objects of thought which it is to receive and (2) incapable of suffering or of being affected by them, i.e. in its own nature, when they are received. As to the sense of ἀπαθής see *notes* on 405 b 19—21 and *infra* 429 b 23, where the quotation from Anaxagoras is repeated. If the meaning were restricted to (1), as a casual reading of Bonitz, *Ind. Ar.*, would lead one to suppose, A. must be thinking in the present passage of the mind of the child at birth or before it has ever thought at all, and πρὶν νοεῖν 429 a 24, πρὶν ἂν νοῇ 429 b 31 would be similarly restricted, which seems inconsistent with 429 b 3—5, which certainly does not refer to the child, and with 429 b 5—9. The second meaning implies the first, for if mind is incapable in its own nature of ever being altered or affected, it must be so incapable to start with. It remains what it was at first, a permanent capacity. The analogy of the senses has prepared us for this conclusion. See ἄχρουν 418 b 26 sq. *note*, ἀκίνητος 420 a 10 (see *note*), a 15—18, and generally 424 a 7—10. The difference is, as Zabarella explains, that sense is impassive only in certain respects, thought in all respects. To apply the term πάσχειν to anything ἀπαθὲς is inconsistent, as A. himself fully admits when he afterwards discusses the difficulty herein involved, 429 b 22 sqq. There is, however, no real contradiction of the preceding sentence when once the meaning is fully understood. Intellect in a still higher degree than sense, 429 a 29 sqq., remains unaffected, i.e. entirely unaltered in its nature, by the object of thought, whatever it be. Intellect is not liable to be altered or destroyed. It is a permanent capacity which, as often as it is acted upon by an object, is developed into actuality (Them. 94, 9 H., 173, 12 Sp. τελειοῖτο ἂν εἰς ἐνέργειαν ἐκ δυνάμεως), and this it could not be if, when once acted upon, it underwent essential modification. Mind cannot at any time receive that which it already possesses in actuality. Any form of its own would stand in the way of its receiving forms from without and spoil it as a recipient of εἴδη and διαφοραὶ τῶν εἰδῶν. The argument is precisely similar to that by which Plato in the *Timaeus* 50 A—51 A demonstrates that his ὑποδοχή, if it is to receive all forms, must itself be destitute of form. Besides the general resemblance of the argument, reminiscences of particular phrases, e.g. παρεμφαῖνον ὄψιν, indicate that A. has this passage especially in view. See Archer-Hind *ad loc.* p. 177 sq.

The resemblance was first pointed out by Teichmüller, *Studien zur Geschichte der Begriffe*, p. 333 sqq. *note*.

a 15. δεκτικὸν δὲ τοῦ εἴδους. Cf. 424 a 18, 425 b 23, of sense, 427 a 8 sq. of sense and thought, with *notes*. Further cf. 414 a 8—10, *Metaph*. 1072 b 22 *τὸ γὰρ δεκτικὸν τοῦ νοητοῦ καὶ τῆς οὐσίας νοῦς*.

a 16. δυνάμει τοιοῦτον, int. *οἷον τὸ νοητὸν ἐντελεχείᾳ ἐστίν*. Like the two preceding characteristics, *ἀπαθὲς* and *δεκτικὸν τοῦ εἴδους*, this has been transferred to thought from sense, where it had become the standing formula. Cf. 417 a 20 *πάσχει μὲν γὰρ τὸ ἀνόμοιον, πεπονθὸς δ' ὅμοιόν ἐστιν*, 418 a 3 *τὸ δ' αἰσθητικὸν δυνάμει ἐστὶν οἷον τὸ αἰσθητὸν ἤδη ἐντελεχείᾳ κτέ.*, 422 a 7, 422 b 15, 424 a 23 sqq. **ἀλλὰ μὴ τοῦτο.** The mind in actual thought is identical with its object at the particular time: previously to actual thinking it is not actually identical, though capable of becoming so. Sense is receptive of the sensible form *ἄνευ τῆς ὕλης*, 424 a 18, and what sense receives then is in this respect (*ἄνευ τῆς ὕλης*) different from the sensible object. This makes clear the meaning of *δυνάμει τοιοῦτον ἀλλὰ μὴ τοῦτο* as applied to *νοῦς*. Intellect before actual thinking is not identical with any of the particular forms which in actual thinking it receives. We may call it an apparatus for receiving all and every such form, *εἶδος εἰδῶν*. But, in order to be such an apparatus, it must be capable of the identification with its object which, according to A., takes place in every act of thought: 429 b 5 *ὅταν ἕκαστα γένηται*: cf. 430 a 2 sq. Here, as elsewhere, *τοῦτο* emphasises the particular *νοούμενον*, *τοιοῦτον* the universal *νοητόν*. For *δυνάμει* cf. Them. 94, 17 H., 173, 24 Sp. *ὥσπερ ἐκείνη* [int. *ἡ αἴσθησις*] *κατ' ἐνέργειαν οὐδ' ὁτιοῦν ἦν ὧν ᾐσθάνετο, οὕτω μηδὲ τὸν τοιοῦτον νοῦν κατ' ἐνέργειαν εἶναί τι τῶν νοουμένων*. In fact, II., c. 12 is the best commentary on the present section.

a 16. ὁμοίως ἔχειν. The construction with *δεῖ*, 429 a 15, is continued.

a 17. ὥσπερ τὸ αἰσθητικὸν...οὕτω τὸν νοῦν. In 402 b 12 *οἷον τὸ νοεῖν ἢ τὸν νοῦν καὶ τὸ αἰσθάνεσθαι ἢ τὸ αἰσθητικὸν* we similarly find *τὸ αἰσθητικὸν* and not *αἴσθησις* answering to *νοῦς*.

a 18. ἀμιγῆ. This is a further inference from the analogy of sense and intellect. With "unmixed" supply "with objects of cognition," i.e. *εἴδη νοητά*, intelligible forms, *πάντα τὰ νοούμενα* being implied in *πάντα νοεῖ*. In 429 b 23 sq. *ἀμιγὴς* is practically replaced by *μηθενὶ μηθὲν ἔχει κοινόν*: cf. 405 b 20. So Alex. apud Philop. 523, 4 *φησὶ γὰρ ὅτι εἰ πάντα νοεῖ, ἀμιγής ἐστι τῶν εἰδῶν καὶ οὐκ ἔχει εἶδος*, Them. 94, 19 H., 173, 27 Sp. *μὴ ἔχειν εἶδος οἰκεῖον μηδὲ μορφήν*, Simpl. 225, 35 *οὐδέν ἐστιν τῶν νοητῶν, ἀλλὰ πρὸς πάντα ὑπάρχει ἀμιγής*: cf. 225, 37 *ἐπεὶ ὅ γε ὡς ὁ ἐπιστήμων ἕκαστα γινόμενος δι' ἑαυτοῦ καὶ οὐκέτι ἀμιγής*. Philop., however, 521, 28; 522, 31 sqq. supplies *τῆς ὕλης* with *ἀμιγής*, which would be an anticipation of 429 a 24, and this view was vehemently maintained by Averroes, Aquinas and many scholastics. But it seems more reasonable that A. should first call attention to the attributes in which intellect and sense agree before passing to their dissimilarity. The dictum of Averroes on this passage "non est corpus neque virtus in corpore" became a battle-ground of controversy. To my view it may be objected that *ἀμιγὴς* approximates in meaning to *ἀπαθής*. No doubt this is true, but we can easily see how both terms came to be used. Their meaning is distinct so long as they are applied to the *νοῦς* of Anaxagoras; it is neither affected by, nor mixed with, the other things in the universe: and the predicates of the Anaxagorean *νοῦς* are transferred, doubtless with some change of meaning, to *νοῦς* as Aristotle conceives it and seeks to define it. Among the attributes ascribed to the deity *Metaph*. 1073 a 3—11 there are duplicates, for it is declared to be *οὐσία ἀΐδιος, ἀκίνητος, κεχωρισμένη τῶν αἰσθητῶν, μέγεθος οὐκ ἔχουσα, ἀμερής, ἀδιαίρετος, ἀπαθές, ἀναλλοίωτον*.

a 18. ὥσπερ φησὶν Ἀναξαγόρας. Cf. Anaxagoras, *frag.* 12 D apud Simpl. in *Phys.* 164, 24 *νοῦς δέ ἐστιν ἄπειρον καὶ αὐτοκρατὲς καὶ μέμεικται οὐδενί.* Cf. *Phys.* VIII. 5, 256 b 24 *διὸ καὶ Ἀναξαγόρας ὀρθῶς λέγει, τὸν νοῦν ἀπαθῆ φάσκων καὶ ἀμιγῆ εἶναι, ἐπειδήπερ κινήσεως ἀρχὴν αὐτὸν ποιεῖ εἶναι· οὕτω γὰρ ἂν μόνως κινοίη ἀκίνητος ὢν καὶ κρατοίη ἀμιγὴς ὤν*, where A. has just been arguing that there is a cause of motion, itself unmoved, *ὃ κινεῖ ἀκίνητον ὄν.* Cf. also Plato, *Crat.* 413 C, *Phaedr.* 270 A. In order to understand the present passage, it is most important to consult the fragment of Anaxagoras which is quoted entire in the *note* on 405 a 16, p. 229 *supra.*

a 19. ἵνα κρατῇ. To Anaxagoras one of its functions was to rule: it rules the rotation of the universe *τῆς περιχωρήσιος τῆς συμπάσης νοῦς ἐκράτησεν.* Another was to arrange in order (*διεκόσμησε*) things past, present and future. Knowledge is no doubt ascribed to it in the words *γνώμην γε περὶ παντὸς πᾶσαν ἴσχει.* But this is something distinct. As A. is adapting the word *κρατῇ* to an account of the mind of man, he must perforce interpret it of cognition. Cf. *Eth. Nic.* 1177 a 14 *δοκεῖ ἄρχειν καὶ ἡγεῖσθαι καὶ ἔννοιαν ἔχειν περὶ καλῶν καὶ θείων.*

a 20. παρεμφαινόμενον γὰρ...ἀντιφράττει. The subject must be *νοῦς.* The neuter gender a 15 (*bis*), a 16 is due to a 10 *μόριον*, with which A. started. It was interrupted by the masculine *ἀμιγῆ* a 18, but is resumed here and a 22 *δυνατόν.* I conceive *παρεμφαινόμενον* to be middle, as in *Probl.* XXIII. 9, 932 b 22 *ἔστι δὲ τὸ ὕδωρ εὐδιοπτότερον τοῦ ἐλαίου. τὸ γὰρ ἔλαιον χρῶμα ἔχει, τὸ δὲ ὕδωρ ἄχροον παρεμφαινόμενον σαφεστέραν ποιεῖ τὴν ἔμφασιν*: water is easier to see through than oil, for oil has colour, but water, presenting a colourless surface, makes the reflection of anything in itself clearer. Here *παρεμφαινόμενον* appears to be no more than *παραφαινόμενον*, though *ἔμφασις* following accords better with *παρεμφαινόμενον.* So in our present passage. The scholastic version *intus iuxta apparens* lays too much stress upon the preposition *ἐν* and thus, as may be seen from Zabarella, gave the mediaeval commentators needless trouble. The force of *παρὰ* here answers somewhat to "intruding itself alongside of the alien object," *παρὰ τῷ ἀλλοτρίῳ*, viz. in the attempt to receive the latter, much as in *Timaeus* 50 E referred to above *παρεμφαῖνον ὄψιν* means "obtruding its own aspect." In Plato the receptacle of generation is compared to a mass of plastic material capable of assuming all the various shapes impressed upon it: for this purpose, Plato argues, it must in its own nature be destitute of shape, *ἄμορφος.* For, if it had a shape of its own, it would render faultily any opposite or entirely different shape impressed upon it from without: (50 E) *ὅμοιον γὰρ ὂν τῶν ἐπεισιόντων τινὶ τὰ τῆς ἐναντίας τά τε τῆς τὸ παράπαν ἄλλης φύσεως, ὁπότ' ἔλθοι, δεχόμενον κακῶς ἂν ἀφομοιοῖ, τὴν αὑτοῦ παρεμφαῖνον ὄψιν.* Similarly with *νοῦς.* Its function is to receive forms, and this would be hindered and obstructed by the actual possession of any form of its own. Alex. Aphr. *De An.* 84, 15 *παρεμφαινόμενον γὰρ τὸ οἰκεῖον εἶδος κωλύει τὴν τοῦ ἀλλοτρίου λῆψιν*, Them. 94, 21 H., 174, 1 Sp. *οὕτω γὰρ ἂν ῥᾷστα γνωρίζοι μηδενὸς οἰκείου παρεμφαινομένου καὶ συνυπάρχοντος· κωλύσει γὰρ καὶ ἀντιφράξει τὸ ἐνυπάρχον εἶδος τὰ ἄλλα ὥσπερ ἀλλότρια*, Simpl. 226, 6 *ἔστι γάρ τις πρὸς ἄλληλα τοῖς εἴδεσιν ἀντίθεσις, δι' ἣν τὸ καθ' ὁτιοῦν αὐτῶν οὐσιωμένον παραποδισθήσεται πρὸς τὴν τῶν λοιπῶν ὑποδοχήν, ἀντιφράττοντος ἢ ἀντιφράξοντος τοῦ ἐνυπάρχοντος πᾶσιν αὐτοῖς.* The present tense *κωλύει* calls for some explanation. If A. is describing what does not take place, a future or an optative with *ἄν*, if not a past indicative with *ἄν*, would seem to be required. Themistius, just cited, has *κωλύσει καὶ ἀντιφράξει*, which Prof. H. Jackson has adopted in his *Texts*, p. 93: cf. 425 a 22 *ἔσται.* But it is best to take the sentence as a general statement with respect

to the validity of a given inference, without any reference to the truth or falsehood of the premisses, *παρεμφαινόμενον* replacing *εἰ παρεμφαίνεται* and not *εἰ παρενεφαίνετο* or the like: cf. Plato, *Phaedr.* 228 A *εἰ ἐγὼ Φαῖδρον ἀγνοῶ, καὶ ἐμαυτοῦ ἐπιλέλησμαι. ἀλλὰ γὰρ οὐδέτερά ἐστι τούτων.* It was probably the difficulty of the tense which led some scholars to explain the sentence in a wholly different way, making *τὸ ἀλλότριον* the subject, agreeing with *παρεμφαινόμενον*: and no doubt it is grammatically more natural to take *παρεμφαινόμενον* and *τὸ ἀλλότριον* together. Thus Argyropylus translates: alienum nanque, cum apparet iuxta, prohibet atque seiungit. So also Teichmüller, *Studien zur Geschichte der Begriffe*, p. 333 sqq. *note*, followed by Wallace ad hunc locum, p. 266. But, if the sentence is so taken, what is the object of *κωλύει*? What is hindered? Presumably the mind is hindered from thinking. So at least Wallace: "the side light and radiance of a foreign unrational object would obstruct and interfere with the action of reason." My friend, Miss M. Alford, would answer the question as follows: "With *κωλύει* I think the subject must be *τὸ ἀλλότριον*, and the object unexpressed, being supplied from *τὸ ἀλλότριον*, which implies another *ἀλλότριον* correlative to it: 'that which is foreign (to another thing) debars and blocks out (that other thing)'; the fact that any *νοητὸν εἶδος* will be foreign to some of the *πάντα* being taken for granted. I find it difficult to believe that a general statement as to what (always) happens—and this must, I think, be the force of the present *κωλύει*—should have as subject 'it,' 'the thing mingled with *νοῦς*,' when the existence of this thing is denied."

In *ἀντιφράττει* I see nothing more than a stronger *κωλύει*, "excludes," "bars out." A similar use of both verbs occurs Theophr. *frag.* 3, *De Igne* § 49 *καὶ ἐὰν ἐπιβάλῃς τι ἐπὶ τὸ ὕδωρ θερμαίνεται θᾶττον ἢ ψιλόν· οἷον γὰρ ἀντιφράττει καὶ κωλύει διατμίζειν τὸ θερμὸν ὥσπερ τὰ ἐπιπωματιζόμενα*, where, in spite of the homely subject, there is perhaps a reminiscence of our passage. Trend., however, was possessed with the idea that the simile must be from light. He accordingly cites passages from A., where *ἀντιφράττειν, ἀντίφραξις* are used of eclipses: *Anal. Post.* II. 2, 90 a 15 sq., *De Caelo* II. 13, 293 b 23 sqq., *Meteor.* II. 8, 367 b 19 sqq., *ib.* I. 8, 345 a 29 sqq. But in an eclipse it is a foreign body (the shadow of the earth in an eclipse of the moon) which obscures and eclipses the light. Cf. *Metaph.* 1044 b 11 *ὡς κινῆσαν καὶ φθεῖραν τὸ φῶς.* And, as Teichmüller and Belger (2nd edition of Trend., p. 386) pointed out, since this foreign body shuts out the light, Trend. is inconsistent in taking the source of light as a parallel to *νοῦς*. If the simile is from an eclipse, *τὸ ἀλλότριον* must be the subject of *ἀντιφράττει*, not, as Trend. supposed, the accusative after the verb: as Belger puts it, "neque enim lux, cuius *νοῦς* similis, sed corpus alienum obstruit luci, quod quidem eo ducit, ut *ἀλλότριον* nominativum putes, evanescat propria *τοῦ ἐμφαίνεσθαι* vis." In fact, if in this sentence A. is influenced by *Timaeus* 50 A—51 A, there is no need to look for any other metaphor than that of a plastic mould assuming successively distinct shapes, a metaphor which Plato also uses *Theaet.* 191 D—192 A, the impression of a seal upon wax 424 a 19 sqq., 435 a 2 sqq. being only a particular application. This simile is one of the two which frequently recur in the attempt to conceive how knowledge is acquired, whether through sense or intellect. The other is from grasping or apprehension, 407 a 10 sqq., *Metaph.* 1051 b 23—25, 1072 b 21. The simile from light in Plato, *Rep.* VI. and VII., resolves itself upon closer analysis in its ultimate explanation into the latter, Plato, like Empedocles before him and A. after him, having his own theory as to the nature of the physiological process of vision.

a 21 ὥστε μηδ' αὐτοῦ...22 ὅτι δυνατόν. The *μηδὲ* goes, not with *αὐτοῦ*, but

with εἶναι φύσιν, "mind has not even any other characteristic save this, that it has potentiality." In other words ἡ φύσις τοῦ νοῦ ἐστὶ τὸ δύνασθαι, τὸ δυνάμει εἶναι. Cf. 417 a 26, 28, *Metaph.* 1019 a 33 sqq., 1046 a 11 ἡ μὲν γὰρ τοῦ παθεῖν ἐστὶ δύναμις, ἡ ἐν αὐτῷ τῷ πάσχοντι ἀρχὴ μεταβολῆς παθητικῆς ὑπ' ἄλλου ἢ ᾗ ἄλλο, 1046 a 20 δυνατὸν γάρ ἐστι καὶ τῷ ἔχειν αὐτὸ δύναμιν τοῦ παθεῖν καὶ τῷ ἄλλο ὑπ' αὐτοῦ. The last two citations show the close connexion of δύναμις with πάσχειν. A. puts his own interpretation upon freedom from admixture with objects of thought. The predicate ἀμιγὲς he interprets as pure potentiality. Νοῦς is, then, actual only in the act of thinking. Similarly, when discussing primary matter, he argues that this also, if it is destitute of all positive qualities, must be a pure potentiality, *Metaph.* 1029 a 7—26. The potentialities in the two cases are quite distinct: the one is a potentiality of receiving νοητὰ εἴδη, the other a potentiality of receiving the elemental qualities, hot, cold, wet, dry.

a 22. ὁ ἄρα καλούμενος τῆς ψυχῆς νοῦς. The use of the participle here and in 407 a 4 does not imply that the term νοῦς is misused, though this is sometimes the case, e.g. τὰ καλούμενα στοιχεῖα. It seems to import "νοῦς in the sense in which we use the word," probably with a suggested contrast to the usage of Anaxagoras or to "νοῦς in the special sense." Thus the meaning might almost be called the opposite of that in which the word implies misuse. Cf. *Metaph.* 1058 a 21, where καλούμενον seems to refer more or less definitely to καλῶ in 1057 b 38. A. is rather endeavouring to mark out more exactly the function of thought, as the relative sentence shows. Cf. 432 b 26 τὸ λογιστικὸν καὶ ὁ καλούμενος νοῦς.

a 23. ᾧ διανοεῖται καὶ ὑπολαμβάνει, "thinks and frames conceptions," such conceptions, or more vaguely, "views," being the result of the reasoning process: mentis operatio [διανοεῖσθαι], quae in ὑπόληψιν desinit de rebus, quales apparent, certi quid definientem (Trend.). For the difference between ὑπόληψις and διάνοια cf. *note* on 427 b 16. The form of the sentence recalls 429 a 10. In neither passage is simple apprehension (ἡ τῶν ἀδιαιρέτων νόησις) prominent, though γνῶσις and τὸ φρονεῖν (as used in *De A.*) are vague enough to include it. The fact is that though we may be able to think ἀδιαίρετα, as soon as we interpret such thoughts, even to ourselves, our thinking invariably assumes the form of τὶ κατά τινος. "I have the notion good" is translated into "This is good," as "I have the sensation of redness" is translated into "This is red."

a 24. οὐθέν ἐστιν ἐνεργείᾳ τῶν ὄντων πρὶν νοεῖν. This is restated 429 b 30 sqq. The statement here made of νοῦς may be taken as parallel to the distinction elaborated in II., c. 5 respecting αἴσθησις, viz. that there is both potential sense, ἡ κατὰ δύναμιν αἴσθησις or δύναμις and ἡ κατ' ἐνέργειαν αἴσθησις or ἐνέργεια: cf. 431 b 24—28. Potentiality passing into activity is a formula applicable to both sensation and intellection. See passage from Them. quoted in *note* on 429 a 16.

a 24. διὸ: a new deduction, not a new proof of an old one, as some have supposed.

a 24 μεμεῖχθαι...25 τῷ σώματι. This plainly follows from the statement made 429 a 18, that νοῦς is ἀμιγὴς in the wider sense preferred above. If, as Simpl. says, νοῦς is in its own nature πρὸς πάντα ἀμιγής, it is so in respect of the body. The phrase μεμεῖχθαι τῷ σώματι occurred 407 b 2, where A. was criticising the indissoluble union of body and soul, there identified with νοῦς (a 4 sq.) in the *Timaeus*. The possibility that some affections of soul were peculiar to soul itself and not, like the rest, common to soul and body was distinctly before us I., c. 1: see 402 a 9 sq., 403 a 3—11. We must, however, remember that there is no reason why some parts of the soul should not be separated from the body,

if they are not the actualities of any body whatever, 413 a 6 sq. True mixture is of body with body, one condition being similarity of matter: cf. *De Gen. et Corr.* I. 10, Them. 94, 30 sq. H., 174, 13 sq. Sp. Mixture in this sense is out of the question when one of the factors is the intellective soul. If νοῦς were a corporeal thing mixed with the body, it would be present in actuality and not potentially: cf. Them. 94, 31 H., 174, 14 sq. Sp. This is not, however, what A. means, for, the whole soul having been defined in II., c. 1 as the entelechy or perfection of body, the part of it which thinks can no more be body than the soul itself, 414 a 20 σῶμα μὲν γὰρ οὐκ ἔστι, σώματος δέ τι. But the term "mixture" receives a wide extension of meaning and is used again improperly of νοῦς b 28 *infra*. Cf. Theophr. apud Them. 108, 24 H., μικτόν, 28 διὰ τὴν μῖξιν of the union of the two intellects. An incorporeal thing can be said *per accidens* to be mixed with body, and this improper extension of the term "mixture" may be used to denote the union of form and matter in the concrete thing. It is in this sense that A. denies of intellect admixture with the body. As part of the soul, intellect resides in the whole body and uses it as its organ. If not exactly "mixed with" the body, intellect is at all events dependent upon the body, without which it could not be supplied with mental images. It must therefore be in respect of its operation that we are now considering the question of admixture or non-admixture with the body. The reception of forms which constitutes thinking may take place without the intervention of the body, and A. would point to profound meditation as a proof of this. It is, as Zeller says, "free and unfettered by the body": cf. Plato, *Phaedo* 64 E—66 A.

a 25 ποιός τις γὰρ...26 θερμός. It would cease to be ἀμιγής. Some of the properties of the body with which it is *ex hypothesi* mixed would be transferred to the whole or compound of which an ingredient is ὁ νοῦς. There can be no μεῖξις in the proper sense of the term between any one of the senses and the bodily part in which it resides. We have μεῖξις or κρᾶσις τῶν ἐναντίων in flesh and other bodily parts: we have also δύναμις καὶ εἶδος ἐπιγινόμενον τῇ κατὰ τὸν τοιόνδε λόγον κράσει τῶν σωμάτων (Alex. Aphr. *De An.* 25, 2 sq.): and by an improper use of the term we apply to the δύναμις καὶ λόγος the predicates which properly belong only to the μεῖξις or κρᾶσις. The difficulty in regarding νοῦς, for the sake of argument, as hot or cold is no greater than in regarding soul as moved: cf. 408 a 30—33. As to the operation of intellect, a comparison with sense at once presents a difference. In respect of the intelligible object, intellect has already been declared to be unaffected and unmixed, and ποιὸς would contradict this. If intellect, like sense, were dependent on some corporeal condition for the reception of the object, it would be mixed with intelligibles and affected by them, which has been denied. That it is unmixed with body in its operation means, as above stated, that it receives intelligible objects without any reception occurring in the body. When the form is received in the animate compound of body and soul, this animate compound must be endued with peculiar qualities, with tangible qualities at any rate, and these constitute the reason why the form is received. In order that the eye may be receptive of colour, it must be affected with a peculiar and natural blending of primary qualities and may be said to be naturally ποιός, and in one respect mixed, although in respect of colour it is unmixed. But intellect has to be absolutely unmixed in respect of all things; therefore it must receive intelligible forms alone and be unmixed with body in its operation. Otherwise it would be mixed with something or other, with some natural blending of hot or cold, which would constitute the reason why it receives its intelligible forms, and it would no longer satisfy the condition ἀμιγῆ εἶναι, laid down as necessary in order that it may think all things.

a 26. ἢ κἂν ὄργανόν τι εἴη, int. *αὐτῷ*, i.e. *τῷ νῷ*. If it were trammelled with the body, there would also be some particular part of the body appropriated to it for its use, as the whole soul uses the whole body 407 b 26; some part, in which, to the exclusion of the rest, the reception of the intelligible form takes place. The analogy of the senses points to this conclusion: cf. 424 a 24 *αἰσθητήριον δὲ πρῶτον ἐν ᾧ ἡ τοιαύτη δύναμις.* The primary qualities are differently blended in different parts of the body, and hence the special organs of sense: e.g. only in the eye, not in flesh or in any other part, are they so blended as to allow the reception of the forms of colour. In bone there is too much earth to allow the reception even of tangibles, 435 a 24 sq. A sense-organ, in fact, is merely a part of the body appropriated for the reception of forms of a given kind.

a 27. οὐθέν ἐστιν, int. *ὄργανον*. Cf. 408 a 12, where it is implied that *νοῦς* is not a *σύνθεσις* of bodily parts, and 411 b 18 sq., where we find that it is not that which holds together or gives unity to any particular part of the body. But the images (*φαντάσματα*) without which it is impossible to think? The last chapter proved that they are *κινήσεις*: they go on *ἐν τοῖς αἰσθητηρίοις*, but are not themselves bodily parts.

For this passage cf. Them. 94, 30 H., 174, 13 Sp. *σώματος γὰρ πρὸς σῶμα μῖξίς ἐστιν. ἀνάγκη δὲ σῶμα ὑπάρχοντα ἐνεργείᾳ εἶναι καὶ μορφὴν ἔχειν οἰκείαν. ἀλλ' οὐδὲ ὀργάνῳ ἂν χρῷτο τῷ σώματι, ὥσπερ ἡ αἴσθησις· καὶ γὰρ οὕτως ἀπολαύσεται τῆς τοῦ ὀργάνου ποιότητος, ἣ συνυπάρχουσα ἀεὶ ταῖς ἐνεργείαις αὐτοῦ τὰ ἄλλα εἴδη κωλύσει. δῆλον δὲ μάλιστα ἐκ τῆς αἰσθητικῆς τοῦτο δυνάμεως· αὕτη γὰρ σῶμα μὲν οὐκ ἔστιν, ἀλλ' ἐπειδὴ χρῆται ὅλως ὀργάνοις σωματικοῖς, συναπολαύει τούτοις τοῦ πάθους*, Simpl. 227, 10—32, especially 16 *ὅτε ἡ τοῦ ὀργάνου ζωὴ καὶ μεμιγμένη τῷ σώματι καὶ συμπεφυρμένη ταῖς ἐν αὐτῷ ποιότησι.* Sophonias infers from the imputation of a property like cold or heat that A. in a 25 is treating *νοῦς* as a *σῶμα* and must therefore be at a different point of view in a 26 when he desiderates an organ: (124, 30) *εἰ γὰρ μέμικται, ἢ κατὰ κρᾶσιν ἐμμέμικται ἢ ὡς εἶδός ἐστι τοῦ σώματος, ὥσπερ τοῦ αἰσθητηρίου ἡ αἴσθησις καὶ τοῦ πεπτικοῦ ἡ πέψις. ἀλλ' εἰ κατὰ κρᾶσιν, ποιός τις ἂν γίγνοιτο, ψυχρὸς ἢ θερμός· εἰ δὲ ὡς εἶδος, κἂν ὄργανόν τι εἴη αὐτῷ, ὥσπερ ἐκεῖ αἰσθήσει μὲν τὸ πνεῦμα ἢ τὸ αἰσθητήριον, πέψει δὲ τὰ οἰκεῖα.* In other words, Soph. treats a 26 *ἢ* before *κἂν* as disjunctive and introducing an alternative hypothesis. This furnishes a simpler explanation of a 25 *ποιός*... a 26 *θερμός*, but we should have expected *ἤ...ἤ*, if A. were considering two alternative hypotheses as to the nature of *μεῖξις*, and it seems rather late in the treatise to be entertaining so crude a conception as a corporeal soul or part of soul.

a 27. τόπον εἰδῶν. No one particular passage can be cited for this expression, but it is quite in the spirit of Plato's idealism. In the *Parmenides* the phrases *ἐν ψυχαῖς* (132 B), *ἐν ἡμῖν* (133 C) and *παρ' ἡμῖν* (134 A), said of the ideas, whether representing Plato's own mature view or not, are an approximation to the language of the text. A.'s approval here is borne out by 431 b 28 sq., 417 b 22—24, 410 a 10—13. In all three passages A. has himself used the words *ἐν τῇ ψυχῇ*, which in our present passage he proceeds pedantically to qualify.

a 28. οὔτε ὅλη, int. *ψυχή*. To complete the sentence we must supply *τόπος εἰδῶν ἐστίν* (or *ὀρθῶς ἂν λέγοιτο*). As it is quite certain (407 a 3 sqq.) that Plato meant the thinking soul, this criticism is merely a verbal correction and hardly touches the doctrine.

a 28 οὔτε....29 δυνάμει. The forms occupy the soul not actually, but potentially. The correction entirely transforms the doctrine. This quality of being the place of forms Them. claims for the sensitive soul as well as for *νοῦς*: 95, 7 H., 175, 6 Sp. *πλὴν ὅτι οὔτε ὅλη ἡ ψυχή, ἀλλὰ αἱ δύο μόναι δυνάμεις καθ' ἥν τε νοοῦμεν καθ' ἥν τε*

αἰσθανόμεθα, οὐθ' οὕτω τόπος ὡς περιέχειν, ἀλλ' ὡς γίνεσθαί πως ἃ νοεῖ καὶ ὧν αἰσθάνεται.

429 b 1. **ἐκ τοῦ σφόδρα αἰσθητοῦ**, "after it has been affected by a sensible object in excess." This meaning of the preposition *ἐκ*, "immediately after" or "following," can be amply illustrated: cf. *Metaph.* 1023 b 6 *μεθ' ὃ τῷ χρόνῳ* [int. *λέγεται τὸ ἔκ τινος*], *οἷον ἐξ ἡμέρας νὺξ καὶ ἐξ εὐδίας χειμών*, *De Gen. An.* I. 18, 724 b 1 *ὡς τόδε μετὰ τόδε, οἷον ἐκ τῶν Παναθηναίων ὁ πλοῦς*, *Hist. An.* IV. 10, 537 a 17 *φέρεται γὰρ ὥσπερ ἐξ ὕπνου ὄντα.* **οἷον ψόφου**, int. *οὐ δύναται αἰσθάνεσθαι.*

b 4. **τὰ ὑποδεέστερα**, int. *τῶν νοητῶν*. The inferiority consists in being less purely objects of thought (*νοητά*), as distinguished from sensibles (*αἰσθητά*); in other words, things that are less abstract. For A.'s position in regard to the various degrees in which the subjects of different sciences are treated as more or less abstract see *Metaph.* 1077 b 22 sqq., 1078 a 5—17. See also *notes* on 402 a 2.

b 5. **οὐκ ἄνευ σώματος**. Cf. *De Sensu* I, 436 b 6 *ἡ δ' αἴσθησις ὅτι διὰ σώματος γίγνεται τῇ ψυχῇ, δῆλον καὶ διὰ τοῦ λόγου καὶ τοῦ λόγου χωρίς*, *De Somno* I, 454 a 7 *ἐπεὶ δ' οὔτε τῆς ψυχῆς ἴδιον τὸ αἰσθάνεσθαι οὔτε τοῦ σώματος (οὗ γὰρ ἡ δύναμις, τούτου καὶ ἡ ἐνέργεια· ἡ δὲ λεγομένη αἴσθησις, ὡς ἐνέργεια, κίνησίς τις διὰ τοῦ σώματος τῆς ψυχῆς ἐστί), φανερὸν ὡς οὔτε τῆς ψυχῆς τὸ πάθος ἴδιον, οὔτ' ἄψυχον σῶμα δυνατὸν αἰσθάνεσθαι*: this is a neat summary of the entire theory of sensation which occupied us almost exclusively from II., c. 5 to III., c. 3. A. is in a position to point out the organs of the special senses and, though he cannot do this with certainty for the organ of the central sense, he is convinced that it is some internal bodily part.

b 5. **ὁ δὲ** [int. *νοῦς*] **χωριστός** [int. *τοῦ σώματος*]. See 429 a 24 sq. It would seem that this reference must be intended rather than a 18; at least, if the explanation given of a 18 is correct. If so, A. has already demonstrated to his own satisfaction (viz. at a 24 sq., though without using precisely the same terms) that *νοῦς* is not so inextricably entangled with the body that it cannot be separated from it. The canon laid down 403 a 10 was: it is possible for the soul to be separated from the body, if any function of soul is peculiar to the soul itself and not shared by it with the body. Cf. 413 a 6 sq., b 24 sqq. With this agrees *De Gen. An.* II. 3, 737 a 8 *τὸ σπέρμα τὸ τῆς ψυχικῆς ἀρχῆς, τὸ μὲν χωριστὸν ὂν σώματος, ὅσοις ἐμπεριλαμβάνεται τὸ θεῖον (τοιοῦτος δ' ἐστὶν ὁ καλούμενος νοῦς), τὸ δ' ἀχώριστον* (the seed or germ of the sensitive and nutritive principles or faculties of the soul). A. is there treating of the origin of life in the embryo. Cf. also *De Gen. An.* II. 3, 736 b 28 *οὐθὲν γὰρ αὐτοῦ τῇ ἐνεργείᾳ κοινωνεῖ σωματικὴ ἐνέργεια.* If the function of thinking is not shared with the body, it is possible that the soul, *quâ* thinking soul, *ᾗ νοητική*, is separable from, or independent of, the body.

b 5. **ὅταν δ' οὕτως ἕκαστα γένηται.** Cf. *supra* 429 a 24 *οὐθέν ἐστιν ἐνεργείᾳ τῶν ὄντων πρὶν νοεῖν*, which implies that in the actual operation of thought the mind does become *τὰ ὄντα*, i.e. *τὰ νοητά*. Cf. 430 a 1, 430 a 3 sq., 430 a 19 sq., 431 b 20 sqq. If *γένηται* implies becoming or change, we must beware of supposing that this is *ἀλλοίωσις* in the physical sense. See 407 a 32 sqq., *Phys.* VII. 3, 247 b 1 *οὐδ' αἱ τοῦ νοητικοῦ μέρους ἕξεις ἀλλοιώσεις*, 247 a 28 *ἀλλὰ μὴν οὐδὲ τῷ διανοητικῷ μέρει τῆς ψυχῆς ἡ ἀλλοίωσις*, *ib.* b 9 *ἡ δ' ἐξ ἀρχῆς λῆψις τῆς ἐπιστήμης γένεσις οὐκ ἔστιν· τῷ γὰρ ἠρεμῆσαι καὶ στῆναι τὴν διάνοιαν ἐπίστασθαι καὶ φρονεῖν λέγομεν. εἰς δὲ τὸ ἠρεμεῖν οὐκ ἔστι γένεσις· ὅλως γὰρ οὐδεμιᾶς μεταβολῆς.* The mention of *λῆψις τῆς ἐπιστήμης* is especially significant in view of 429 b 8 *πρὶν μαθεῖν ἢ εὑρεῖν.* We must assume for the thinking soul the twofold

meaning of μεταβολή and ἀλλοίωσις elaborated 417 a 21 sqq. for the sensitive soul on the analogy of ὁ ἐπιστήμων. Here, as there, we are to understand *alteratio perfectiva, non corruptiva.*

b 6. **λέγεται**, int. ἐπιστήμων. Cf. 424 a 23, *note.* See also *Metaph.* 1048 a 32 λέγομεν δὲ δυνάμει...a 34 ἐπιστήμονα καὶ τὸν μὴ θεωροῦντα, ἐὰν δυνατὸς ᾖ θεωρῆσαι.

b 7. **ὅταν δύνηται**, int. ὁ ἐπιστήμων, although some commentators prefer to understand ὁ νοῦς: so Philop. 524, 19—22, Simpl. 229, 37 sqq., and so apparently Alex. Aphr. *De An.* 85, 25 ὅταν γὰρ ἐν ἕξει γένηται διὰ τὰς συνεχεῖς ἐνεργείας τοιαύτῃ, ὡς δι' αὑτοῦ λοιπὸν ἐνεργεῖν δύνασθαι. But Them., whose paraphrase here appears to me to betray an acquaintance with Alex. Aphr., seems to have taken the verb with ὁ ἐπιστήμων: 95, 12 H., 175, 15 Sp. τηνικαῦτα τελεώτερος γίνεται νοῦς ἀνάλογον ἔχων τῷ ἐπιστήμονι, ὅστις τὰ θεωρήματα τῆς ἐπιστήμης συνειληχὼς οἷός τε καθ' ἑαυτὸν ἐνεργεῖν ἕκαστον αὐτῶν ἰδίᾳ προχειριζόμενος, καὶ οὔτε διδασκαλίας ἔξωθέν τινος οὔτε γυμνασίας δεόμενος. From the words of Theophrastus apud Prisc. Lyd. 31, 8 ὡς ἐπιστήμων κατ' ἐνέργειαν λέγεται, τοῦτο δὲ συμβαίνειν φαμὲν ὅταν δύνηται κτέ. it is difficult to determine how he took the sentence. Probably he made νοῦς the subject to δύνηται δι' αὑτοῦ ἐνεργεῖν.

b 7. **δι' αὑτοῦ**, i.e. without further instruction, unaided. When the ἕξις is formed, the savant can apply his knowledge at will, βουληθεὶς δυνατὸς θεωρεῖν 417 a 27. It is, in fact, this characteristic of free and self-determined energy that differentiates the higher form of δύναμις, called ἕξις, from the primitive δύναμις of which it is a development.

b 8. **ἔστι μὲν καὶ τότε δυνάμει πως.** The subject is νοῦς, as in 429 b 3. **καὶ τότε** = "then also." Intellect can be said to be in potentiality in two different senses: (1) as it is used of the child before actually thinking at all, when νοῦς is destitute of the ideas which are to become its content; (2) after it has begun to think and has thus acquired the ideas, e.g. of a horse or a triangle, by learning or discovery, the corresponding stage being reached by the αἰσθητικὸν at birth, 417 b 16 sqq. At this stage the νοητὰ in the soul are in that condition of potentiality and actuality in which αἰσθητὰ are when they cause perception, i.e. they are in a manner potential before and until, but actual in, the act of thinking. Now αἰσθητὰ are already ἐνεργείᾳ or ἐντελεχείᾳ ὄντα in the sense required by 417 a 17 sq., 431 a 3—5: yet still they are δυνάμει in relation to the more complete actuality which is reached by their causing perception, 425 b 26 sq. In the same way at the stage when it is *in habitu* νοῦς can without external aid think the νοητὰ that are in itself, in one sense δυνάμει ὄντα and in another sense ἐνεργείᾳ ὄντα, and thereby think itself, 430 a 2 sq. There is no difficulty about the first sense of δύναμει, while for (2) we have the analogy of ὁ ἐπιστήμων after he has acquired the faculty, ἕξις, of knowledge: he is then potentially a savant, as explained in II., c. 5, because he can apply his knowledge at will, 417 a 27 sqq., and his change from potentiality to active operation is (417 a 32) ἐκ τοῦ ἔχειν τὴν αἴσθησιν ἢ τὴν γραμματικήν, μὴ ἐνεργεῖν δ' εἰς τὸ ἐνεργεῖν. Cf. also *Phys.* VIII. 4, 255 a 33 ἔστι δὲ δυνάμει ἄλλως ὁ μανθάνων ἐπιστήμων καὶ ὁ ἔχων ἤδη καὶ μὴ θεωρῶν. So, too, νοῦς can think at will, 417 b 24 διὸ νοῆσαι μὲν ἐπ' αὐτῷ, ὁπόταν βούληται. Into the process of learning and acquiring knowledge A. does not enter here. He explains it *Anal. Post.* II., c. 19, *Metaph.* A., c. 1, dwelling on the gradual formation of universals, for which sensation, imagination and memory are required. Cf. Alex. Aphr. *De An.* 85, 11—25, especially (20) ἐγγίνεται δὲ ἡ τοιάδε ἕξις τῷ νῷ τὴν ἀρχὴν κατὰ μετάβασιν ἀπὸ τῆς περὶ τὰ αἰσθητὰ συνεχοῦς ἐνεργείας ὥσπερ ὄψιν τινὰ ἀπ' αὐτῶν λαμβάνοντος τοῦ καθόλου θεωρητικήν, ὃ κατ' ἀρχὰς μὲν

νόημα καὶ ἔννοια καλεῖται, πλεονάσαν δὲ καὶ ποικίλον καὶ πολύτροπον γινόμενον, ὡς δύνασθαι καὶ χωρὶς τῆς αἰσθητικῆς ὑποβάθρας ποιεῖν τοῦτο, νοῦς ἤδη. Cf. also Them. 95, 9 H., 175, 10 Sp. *οὗτος τοίνυν ὁ δυνάμει νοῦς γίνεται μὲν καὶ ἐν τοῖς νηπίοις· ὅταν δὲ ἀπὸ τῶν αἰσθητῶν καὶ τῶν ἀπὸ τούτων φαντασιῶν καὶ τῆς περὶ ταῦτα γυμνασίας τὸ καθόλου δύνηται θηρεύειν καὶ συνάγειν τὸ ὅμοιον ἐν τοῖς ἀνομοίοις καὶ τὸ ταὐτὸν ἐν τοῖς διαφόροις, τηνικαῦτα τελεώτερος γίνεται νοῦς*...(16 H., 20 Sp.) *ἔστι μὲν οὖν καὶ τηνικαῦτα δυνάμει, οὐ μὴν ὁμοίως καὶ πρὶν μαθεῖν ἢ εὑρεῖν· ἐγγίνεται γὰρ οἷον ὄψις αὐτῷ πρότερον οὐκ ἐνοῦσα ὁρατικὴ τῶν ὁμοίων καὶ τῶν ἀνομοίων καὶ ταὐτοῦ καὶ ἑτέρου καὶ ἀκολούθου καὶ μαχομένου, καὶ αὐτὸς δὲ ἑαυτὸν τηνικαῦτα δύναται νοεῖν.*

b 9. **καὶ αὐτὸς δέ,** int. *ὁ νοῦς*.

b 9. **αὑτὸν τότε δύναται νοεῖν.** This conclusion is not at first sight easy to follow. Alex. Aphr. *De An.* 86, 14 sqq. gives the steps of the argument thus. Mind in active operation has for its object the intelligible form and is nothing else than the form which is its object. In thinking it becomes the intelligible form, and this form is the thinking mind itself: *καὶ ἐπεί ἐστιν ὁ κατ' ἐνέργειαν νοῦς οὐδὲν ἄλλο ἢ τὸ εἶδος τὸ νοούμενον, ὥσπερ καὶ ἐπὶ τῆς αἰσθήσεως ἐδείχθη, ὁ ἐν ἕξει νοῦς (οὗτος δέ ἐστιν ὁ νοεῖν ἐπ' αὐτοῦ δυνάμενος καὶ τὰ τῶν νοητῶν εἴδη λαμβάνειν καθ' αὑτά), οὗτος ἤδη δύναται καὶ αὑτὸν νοεῖν. ἐπεὶ γὰρ τὸ νοούμενον εἶδος αὐτός ἐστιν, εἴ γε νοῶν ὃ νοεῖ γίνεται, ὁ ἄρ' ἕξιν ἔχων τοῦ τὰ εἴδη νοεῖν, οὗτος ἕξιν καὶ δύναμιν ἔχει τοῦ νοεῖν ἑαυτόν. ὃ γὰρ δύναται νοεῖν, τοῦτο αὐτὸ αὐτὸς νοῶν γίνεται.* I append in outline the substance of Zabarella's note. Mind thinks itself, not directly, but in contradistinction to other things, *νοητά*, 430 a 2 sq., and so *per accidens*: cf. *Metaph.* 1074 b 35 sq. When Alex. Aphr. says *εἴ γε νοῶν ὃ νοεῖ γίνεται*, this must not be distorted to mean, in the words of Zabarella, "penitus idem quod res intellecta, et sicut eam intelligit se intelligit." For from this it would follow that intellect knows itself primarily and *per se*, not secondarily and *per accidens*. It thinks other *νοητὰ per se* because they stand to it as its primary objects, and would think itself *per se* if it were entirely identical with them. Experience shows that the mind thinks other things without any self-consciousness. The identity of intellect and thing thought must be understood as a mental, not a real, identity. For intellect is *realiter* always substance and form and never becomes transformed into another entity. In thinking it must be regarded as standing to the *εἶδος νοητὸν* as matter to form and, paradoxical as this may appear when we know that it is also *εἶδος εἰδῶν*, it is *δεκτικὸν τοῦ εἴδους*, 429 a 15. In this respect, that its real nature remains unchanged, it may be compared with primary matter. Hence intellect must know itself as different from the things which it thinks. It knows itself, then, by reflecting, or in so far as it reflects, upon its own operation. It knows that it thinks; it knows therefore that it has a nature adapted to become everything, which was *in potentia* before actually thinking. It knows itself indirectly, i.e. non per speciem propriam sed per alienam. So too, we must remember, sense perceives substance not directly, but *per accidens*, 418 a 20 sqq. It is implied in our passage that it is not until it has acquired habits that intellect is adapted to think itself. Note how the bounds of thought and knowledge are here extended. Above, human intellect has for its primary object all things except itself: now, indirectly, it also knows itself. Note also that to know itself belongs alike to sense (III., c. 2 *ad init.*) and intellect.

429 b 10—22. Taking into account the familiar distinction between the concrete thing and its form or quiddity, we may say that it will be either a different faculty or a different attitude of the same faculty which apprehends the one and the other. The qualities of flesh are judged by sense, the quiddity of

flesh by something distinct, by a faculty which is either separated from sense, or related to it as the bent line when it is straightened out is related to its former self [§ 7]. The same is true of the objects of mathematics. That which is straight answers to the concrete thing, the "snub-nosed," having extension for its matter [ὕλη νοητή]. But its quiddity, the straightness of the straight (always supposing we distinguish between the straight and its quiddity) is judged either by a different faculty from that which cognizes the straight, or by the same faculty in another relation. And, generally, the operations of intellect upon different objects vary with the greater or less degree in which form is implicated with matter in these objects, i.e. according as such objects are εἴδη ἔνυλα, or εἴδη ἄυλα [§ 8].

429 b 10. ἄλλο ἐστὶ τὸ μέγεθος καὶ τὸ μεγέθει εἶναι. Cf. *Metaph.* Z., c. 4, especially 1030 a 6 sqq. This is the distinction between a thing and its τί ἦν εἶναι or quiddity, i.e. a thing in the concrete and a thing in the abstract. See *notes* on 412 b 11, 13. **καὶ ὕδωρ καὶ ὕδατι εἶναι.** In calling attention to this distinction A. uses two examples; the former, magnitude, taken from the region of mathematics, τὰ ἐν ἀφαιρέσει ὄντα (429 b 18), the latter, water, from the region of physics. The distinction between the thing and its quiddity is more easily seen in the latter region. Water, like flesh, which replaces it as the typical example in b 12 sq., is a compound, σύνολον, of form and matter (412 a 6 sqq.), its quiddity, aquosity, being the form. The relation of magnitude and its quiddity is similar to that between τὸ εὐθὺ and τὸ εὐθεῖ εἶναι explained below in *note* on 429 b 18. For the omission of the article before ὕδατι εἶναι cf. 416 b 12.

b 12. ἐπ' ἐνίων γάρ. Cf. *Metaph.* 1031 b 12, 1032 a 5 sq. It appears that this is the case ἐπὶ τῶν πρώτων καὶ καθ' αὑτὰ λεγομένων, e.g. good, beautiful, Being, One, infinity, curvature. If the concrete and the abstract are thus identical, the concrete is not a true concrete. Cf. *Metaph.* 1037 a 33 καὶ ὅτι [int. εἴρηται] τὸ τί ἦν εἶναι καὶ ἕκαστον ἐπὶ τινῶν μὲν ταὐτόν, ὥσπερ ἐπὶ τῶν πρώτων οὐσιῶν, οἷον καμπυλότης καὶ καμπυλότητι εἶναι, εἰ πρώτη ἐστίν. λέγω δὲ πρώτην ἣ μὴ λέγεται τῷ ἄλλο ἐν ἄλλῳ εἶναι καὶ ὑποκειμένῳ ὡς ὕλῃ. ὅσα δ' ὡς ὕλη ἢ ὡς συνειλημμένα τῇ ὕλῃ, οὐ ταὐτό and 1030 a 10 sq. **τὸ σαρκὶ εἶναι.** The apodosis begins here.

b 13. [καὶ] ἢ ἄλλῳ ἢ ἄλλως ἔχοντι κρίνει. I am unable to retain καὶ before ἢ either as "in fact" to emphasise κρίνει or as hinting at <καὶ κρίνει> καὶ κτέ., as if the sense were "judges the two and, what is more, judges them either with different instruments or etc." I suspect a confusion of compendia. On the analogy of 426 b 17, 430 b 24, the subject to be supplied here and in b 15, 17, 21 will be τὸ κρῖνον, which is best understood as the person who judges, whether the judgment be through sense or intellect. This accords with A.'s own precept 408 b 13 sqq. and makes the use of the instrumental dative much simpler: cf. 426 b 14, 17, 23, 427 a 14, 431 a 20. Zeller (*Aristotle*, vol. II., p. 93, *n.* 6, Eng. Tr.) takes ὁ νοῦς to be the subject, which is extremely awkward at b 15, 17, since there Zeller has to explain that νοῦς knows sensibles by means of the sensitive faculty, while it is *per se* that it knows the form; in other words, the other faculty, either separable or in the relation of a straightened to a bent line, which νοῦς employs, is νοῦς itself. It must, however, be conceded that the words ὁ νοῦς once stood in cod. E after κρίνει, as they still stand in cod. L. If, on the other hand, by τὸ κρῖνον we understand the person judging or discerning, since he is possessed of both faculties, he may, ᾗ αἰσθητικός, employ the sensitive faculty for sensibles and, ᾗ νοητικός, employ the intellect for forms or quiddities. With ἄλλῳ understand ἑκάτερον, while in ἄλλως ἔχοντι is implied τῷ αὐτῷ, by a

different instrument in the one case and in the other, ἄλλῳ καὶ ἄλλῳ, or by the same instrument in a different relation, τῷ αὐτῷ ἄλλως καὶ ἄλλως ἔχοντι. These words, which recur b 16, 20 sq., have the brevity of a formula. Most authorities have supposed sense and intellect to be the two faculties alluded to, and the whole discussion as far as b 22 to deal with the part they respectively play in intellectual apprehension. There can be no question that, according to A., we think as well as perceive concrete substance, e.g. τὸ μῆκος 430 b 7 sq., 12, τὸ σιμὸν 431 b 12 sqq. As Zeller puts it, l.c., "while the simple perception of the data of sense belongs to αἴσθησις, and not to νοῦς, yet every judgment relating to them is shared in by thought (νοῦς in the wider sense)....Conceptions, on the other hand, as such, universal thoughts limited to no individual experience, are known by reason *per se*, although the material for them is supplied by sense-perception." Since we know flesh and the like by sense and forms or quiddities by intellect, A. appears to be discussing the question, Are sense and intellect different or are they the same faculty in two different attitudes? The difference between the two faculties has been assumed all along (e.g. 413 b 24 sqq., 414 b 16 sqq.) on the ground that animals are found possessed of sensation but devoid of intellect. A. may be taking up the question, left undecided in 429 a 11, as to what is the kind and degree of separation between intellect and the rest of the faculties. It may seem strange that intellect should after all only be sense in a different relation, but many considerations favour such a view. Throughout the treatise A. has been hostile to the assumption of distinct "parts" of soul, and where he accepts it as a working hypothesis, it is under protest, e.g. 432 a 22 sqq. The essential unity of the soul is emphasised again and again. A. has an account to settle with himself, for in Book II., whenever he approaches the subject, his language is vague, e.g. 413 a 3 sqq., b 24 sqq., 415 a 6 sqq. Moreover, in others of his writings he approximates sense to thought. Thus sense is of the universal, ἡ δ' αἴσθησις τοῦ καθόλου ἐστίν *Anal. Post.* II. 19, 100 a 17, though it be merely *per accidens*, *Metaph.* 1087 a 19 sqq.; while *Eth. Nic.* 1143 a 35 sqq. νοῦς πρακτικὸς is identified with αἴσθησις. On the whole this way of dealing with the passage presents less difficulty than to understand by ᾗ...ᾗ a hard and fast distinction for which the appropriate instances are not easy to discover. It might be plausibly held that, when we know physical objects, the instruments are quite distinct, viz. sense for the things and intellect for the quiddity, and that, when we know mathematical objects, both the thing and its quiddity are cognized by intellect, though in a different relation, since in the region of mathematics even the matter is intelligible matter. But the formula ἄλλῳ ἢ ἄλλως ἔχοντι confronts us *here*, where flesh has been the instance cited, so that this attempt breaks down (unless we are prepared to alter the text). Another hypothesis is that of M. Rodier. He assumes that flesh is an ambiguous term, including (1) particular flesh cognized by sense and (2) the universal flesh cognized by intellect. When we mean (1), flesh and its quiddity are judged by two different faculties: when we mean (2), flesh and its quiddity are discerned by the same faculty, viz. intellect, in two different relations. Ingenious as this is, it may be urged (1) that it is unlikely that A. would use σὰρξ ambiguously without calling attention to its two distinct meanings. His readers generally complain of the opposite fault and grow weary of the hair-splitting distinctions which he is continually repeating. (2) Water and flesh are things objectively existing, flesh universal is a conception, a fiction of the mind reached by abstraction, properly belonging to τὰ ἐν ἀφαιρέσει ὄντα, in spite of the fact that this phrase is conventionally restricted to the objects of the mathematical sciences. (3) There is no necessity

to take ἢ...ἢ as mutually exclusive, the second ἢ may be no more than "vel potius." When we call the faculty which cognizes the quiddity a distinct faculty, we must not forget that to speak of distinct faculties is an accommodation to popular usage and quite compatible with their all being *τῷ ὑποκειμένῳ ἕν*. (4) M. Rodier assumes that *τὸ σύνολον τὸ καθόλου* is necessarily apprehended by intellect. There is, however, as we have seen, an indirect apprehension of *τὸ καθόλου* by sense.

b 14. οὐκ ἄνευ τῆς ὕλης. This implies that *τὸ σαρκὶ εἶναι*, seeing that it is different from *σάρξ* (429 b 10), is *ἄνευ τῆς ὕλης*, or more precisely, the matter is no "part" of the quiddity of flesh (*Metaph.* 1035 a 1—7), though it is a necessary condition in order that the form or quiddity of flesh, which is *εἶδος ἔνυλον*, may exist (403 b 2 sq.), i.e. may appear in *αἰσθητὴ οὐσία* as *ἡ κατὰ τὸν λόγον οὐσία* of some *σύνολον*. It is owing to matter that a thing having a quiddity is different from the quiddity: *Metaph.* 1043 b 2—4. **τὸ σιμόν,** A.'s standing example of a concrete thing, *τὸ κοῖλον* being the corresponding abstract. There can be no *σιμὸν* apart from *ὕλη*, no camosity without a nose. Cf. *Metaph.* 1030 b 28 *εἰ μὲν γὰρ τὸ αὐτό ἐστι σιμὴ ῥὶς καὶ κοίλη ῥίς, τὸ αὐτὸ ἔσται τὸ σιμὸν καὶ τὸ κοῖλον· εἰ δὲ μὴ διὰ τὸ ἀδύνατον εἶναι εἰπεῖν τὸ σιμὸν ἄνευ τοῦ πράγματος οὗ ἐστὶ πάθος καθ' αὑτό (ἔστι γὰρ τὸ σιμὸν κοιλότης ἐν ῥινί), τὸ ῥῖνα σιμὴν εἰπεῖν ἢ οὐκ ἔστιν ἢ δὶς τὸ αὐτὸ ἔσται εἰρημένον, ῥὶς ῥὶς κοίλη*, 1025 b 32 sqq., 1064 a 23 sqq. See also *note* on 403 b 11.

b 14. τόδε ἐν τῷδε, this definite form in this definite matter, e.g. *κοιλότης ἐν ῥινὶ* in the last citation. **τῷ μὲν οὖν αἰσθητικῷ.** We cannot get to know an external object without the aid of sense: 417 b 19—22, 431 a 3—5, 432 a 7 sq., *Anal. Post.* I. 18, 81 a 38 sqq. In *De Sensu* c. 6, A. asserts that hypothetical particles too small for sense to perceive are not *νοητά*: 445 b 15 *ἔτι τίνι κρινοῦμεν ταῦτα ἢ γνωσόμεθα; ἢ τῷ νῷ. ἀλλ' οὐ νοητά, οὐδὲ νοεῖ ὁ νοῦς τὰ ἐκτὸς μὴ μετ' αἰσθήσεως.* If *ὁ νοῦς* were, as some hold, the subject of 429 b 15 *κρίνει*, then, instead of the dative, we should certainly expect *μετὰ τοῦ αἰσθητικοῦ.*

b 15. τὸ θερμὸν καὶ τὸ ψυχρόν. Cf. *Metaph.* 1025 b 34 sqq. *εἰ δὴ πάντα τὰ φυσικὰ ὁμοίως τῷ σιμῷ λέγονται, οἷον...σάρξ.* Flesh as *τόδε τι* or *σύνολον* is judged solely by sensibility. Here A. means the accidents by the aid of which particular concrete things are perceived by sense, for the substance of concrete things, we must remember, is not directly perceived, but only *per accidens*, indirectly, through the sensible forms of its accidents; and in the same indirect fashion *τὸ καθόλου* is perceived by sense, *Metaph.* 1087 a 19 sqq. When the eye perceives the whole coloured wall, it is only the colour which directly acts upon the eye. The addition of the clause *καὶ ὧν...σάρξ* shows that hot and cold are only adduced as examples of the essential qualities of flesh: what is said applies not only to hot and cold, but to any other qualities, the proportional adjustment of which constitutes flesh itself and makes it a sensible object, *αἰσθητόν τι.* Cf. *Metaph.* 1001 b 32 *ἃ δὲ μάλιστ' ἂν δόξειε σημαίνειν οὐσίαν, ὕδωρ καὶ γῆ καὶ πῦρ καὶ ἀήρ, ἐξ ὧν τὰ σύνθετα σώματα συνέστηκε, τούτων θερμότητες μὲν καὶ ψυχρότητες καὶ τὰ τοιαῦτα πάθη, οὐκ οὐσίαι.* Cf. *ib.* 1070 b 11 "we may say that sensible bodies have heat for form and in another sense cold for privation, whilst for matter there is that which is primarily in itself the potentiality of hot and cold, these being substances as well as the compounds of which these are elements: in fact, any compound constituted, like flesh and bone, of hot and cold." Since hot and cold are *αἰσθητά*, the argument of 426 b 14 sq. applies: it must be by sense that they are known.

b 15 καὶ ὧν...16 ἡ σάρξ, i.e. *καὶ ἐκεῖνα ὧν λόγος τίς ἐστιν ἡ σάρξ*, those qualities of which flesh is a certain determining proportion, those qualities which, being

combined in a certain specific proportion, constitute flesh. The particular proportion which determines the proper adjustment (temperies) of flesh is *λόγος τῆς μείξεως*: cf. 408 a 14 *οὐ γὰρ τὸν αὐτὸν ἔχει λόγον ἡ μεῖξις τῶν στοιχείων καθ' ἣν σὰρξ καὶ καθ' ἣν ὀστοῦν*, 410 a 1 *οὐ γὰρ ὁπωσοῦν ἔχοντα τὰ στοιχεῖα τούτων ἕκαστον, ἀλλὰ λόγῳ τινὶ καὶ συνθέσει.* What A. says of the accidents is said of the individual compound perceptible to sense owing to these accidents, accidents and compound being in the same grade of cognoscibility by *νοῦς*. Two of the four elements which enter into the composition of flesh are prominently mentioned, viz. fire and earth. Cf. 423 a 12 sqq., b 27 sqq., 435 a 21—24, *De Gen. An.* II. 1, 734 b 29 *οὐδὲ πόδα οὐδὲ χεῖρα* [int. *φήσαιμεν ἂν ποιῆσαι τὸ πῦρ μόνον*]. *τὸν αὐτὸν δὲ τρόπον οὐδὲ σάρκα· καὶ γὰρ ταύτης ἔργον τί ἐστιν. σκληρὰ μὲν οὖν καὶ μαλακὰ καὶ γλίσχρα καὶ κραῦρα, καὶ ὅσα ἄλλα πάθη ὑπάρχει τοῖς ἐμψύχοις μορίοις, θερμότης καὶ ψυχρότης ποιήσειεν ἄν, τὸν δὲ λόγον ᾧ ἤδη τὸ μὲν σὰρξ τὸ δ' ὀστοῦν, οὐκέτι, ἀλλ' ἡ κίνησις ἡ ἀπὸ τοῦ γεννήσαντος τοῦ ἐντελεχείᾳ ὄντος ὅ ἐστι δυνάμει ἡ ἐξ οὗ γίνεται, ὥσπερ καὶ ἐπὶ τῶν γινομένων κατὰ τέχνην*, *Metaph.* 1041 b 17 *καὶ ἡ σὰρξ οὐ μόνον πῦρ καὶ γῆ ἢ τὸ θερμὸν καὶ ψυχρόν, ἀλλὰ καὶ ἕτερόν τι* (something further, viz. what in the *De A.* is called *λόγος τις*: cf. *Metaph.* 1043 b 7 sqq.). Sense by itself is incapable of cognizing this *λόγος*. Cf. also *De Part. An.* I. 1, 642 a 22 *δῆλον τοίνυν ὅτι καὶ ἡ σὰρξ τὸν αὐτὸν τρόπον ἐστί, καὶ τῶν ἄλλων τῶν τοιούτων μορίων ἕκαστον.* Flesh with A., as with Plato, *Tim.* 82 C, is a typical example of a tissue in which the combination of certain elements produces a thing of entirely different qualities from those of its constituents, as in a chemical compound. The qualities of the compound depend upon the proportion in which the constituents are blended and will alter or disappear if this proportion is disturbed. Cf. p. 264 *supra*.

b 16 ἄλλῳ δὲ ἤτοι...17 ἐκταθῇ. There is no disagreement as to the fact. Intellect, *τὸ νοητικόν*, must be intended. What we want to know is why, instead of stating this briefly *ἄλλῳ δὲ τῷ νοητικῷ τὸ σαρκὶ εἶναι κρίνει*, A. has used the words of the lemma, presenting two alternative hypotheses. I do not think that he is attempting to cover two possible cases, but that he is offering two conceivable views of the relation of intellect to sense. Cf. 417 b 12 *τὸ δ' ἐκ δυνάμει ὄντος μανθάνον καὶ λαμβάνον ἐπιστήμην ὑπὸ τοῦ ἐντελεχείᾳ ὄντος καὶ διδασκαλικοῦ ἤτοι οὐδὲ πάσχειν φατέον, ἢ δύο τρόπους εἶναι ἀλλοιώσεως.* Whichever view we take, whether that intellect is *χωριστός* (int. *τοῦ αἰσθητικοῦ*, which must certainly be supplied with *ἄλλῳ*) or whether it stands to sense as the straightened line stands to the bent or broken line, I conceive that he intends the words *ἤτοι...ἐκταθῇ* to be an elucidation of *ἄλλῳ* as applied to the single case of intellect discerning the quiddity of flesh. We may replace *ἄλλῳ* by *χωριστῷ* or we may interpret *ἄλλῳ* by the simile of the line: and these two cases correspond roughly to the former alternative b 13 *ἄλλῳ ἢ ἄλλως ἔχοντι*, except that A. has now made more explicit what he intended by that alternative and now uses *ἄλλῳ* of both. By *χωριστῷ* must be understood "absolutely separable," as in 429 b 5, 430 a 17, i.e. wholly independent of *σωματικὴ ἐνέργεια* and therefore of the faculties which involve this: cf. 408 b 29, 413 a 6 sq., b 25 sqq. In *Eth. Nic.* I., c. 13 when A. declines to enquire into the relation between the irrational and rational parts of the soul, *τὸ ἄλογον* and *τὸ λόγον ἔχον*, he uses similar language: 1102 a 28 *ταῦτα δὲ* [int. *τὸ ἄλογον* and *τὸ λόγον ἔχον τῆς ψυχῆς*] *πότερον διώρισται καθάπερ τὰ τοῦ σώματος μόρια καὶ πᾶν τὸ μεριστόν, ἢ τῷ λόγῳ δύο ἐστὶν ἀχώριστα πεφυκότα καθάπερ ἐν τῇ περιφερείᾳ τὸ κυρτὸν καὶ τὸ κοῖλον*, where, however, the metaphor is not the same.

If the line preserves its identity, *κεκλασμένη* cannot mean "broken in two," but must mean "bent at an angle." Cf. *Phys.* V. 4, 228 b 24, *Meteor.* III. 6,

377 b 21 ὥσπερ ἀπὸ χαλκοῦ λείου κλωμένης [int. τῆς ὄψεως, the visual ray which is reflected], *Probl.* v. 19, 882 b 33 ἐν μὲν οὖν τοῖς ἀνάντεσι τὰ γόνατα κλᾶται εἰς τοὔπισθεν. The verb κάμπτεσθαι, which is often used like κλᾶσθαι of two straight lines forming an angle, can also be used of curves. In *Meteor.* IV. 9 κεκαμμένον is opposed to εὐθύ: 386 a 1 ἡ μὲν οὖν εἰς κυρτότητα ἢ κοιλότητα κίνησις τοῦ μήκους σωζομένου κάμψις ἐστίν· εἰ γὰρ καὶ εἰς τὸ εὐθύ, εἴη ἂν ἅμα κεκαμμένον καὶ εὐθύ· ὅπερ ἀδύνατον, τὸ εὐθὺ κεκάμφθαι. If in the simile curved lines were intended and not rectilinear segments, ἡ κεκαμμένη would have been more appropriate. The precise application of the simile in our text is of less importance than the recognition that it interprets more definitely ἄλλως ἔχοντι above, the simile from the bent and straightened line being most suitable for the expression of real identity in relative difference. Diametrically opposite views have been taken, some maintaining that the straightened line stands for intellect and the bent or broken line for sense; others, e.g. Teichmüller (*Stud. zur Gesch. der Begriffe*, p. 492 sqq.), as confidently maintaining the opposite, that the bent or broken line stands for intellect and the straight line for direct perception of particulars by sense. I see no reason for departing from the former view, which is that of the Greek commentators: their assumption that ὁ νοῦς is the subject of κρίνει throughout the discussion does not invalidate their conclusions: Them. 96, 8—30 H., 177, 3—178, 6 Sp., Simpl. 231, 21—34, 232, 13—233, 3, Philop. 526, 3—10, 530, 29—531, 5. An unfortunate use of chiasmus in the main passage renders the evidence of Them. somewhat ambiguous, but that this is what he meant seems clear from the words (96, 24 H., 177, 26 Sp.) συνεξομοιοῦται γὰρ τοῖς πράγμασιν ἃ θεωρεῖ, καὶ ποτὲ μὲν ὥσπερ σύνθετος γίνεται, ὁπόταν τὸ σύνθετον νοῇ, ποτὲ δὲ ὡς ἁπλοῦς, ὅταν τὸ εἶδος ἐκλαμβάνῃ...γίνεται γὰρ ἀνθ' ἑνὸς ὥσπερ διπλοῦς τηνικαῦτα, ὅταν τὴν ὕλην συμπαρασκοπῇ τῇ μορφῇ. That A. regarded a straight line as more truly "one" than the same line when bent or crooked is attested *Metaph.* 1016 a 12 sqq. Simpl. also conceives the bent line to be a departure from the simplicity of the straight line, 231, 18 λογικῇ δὲ γνώσει τὰς συνθέτους καὶ ὅλως τὰς εἰδοπεποιημένας οὐσίας, καὶ ἑτέρᾳ οὔσῃ τῆς τῶν εἰδῶν ἀντιληπτικῆς καὶ τῇ αὐτῇ μὲν ἀλλ' οἷον καμφθείσῃ καὶ οὕτω τὰ ὁριζόμενα νοούσῃ. τοὺς γὰρ ὅρους ὀρθῶς καὶ ἀκαμπῶς...(24) ἡ δὲ κλάσις δηλοῖ τὴν μέθεξιν [int. τῆς τελειότητος]...(27) καὶ ἡ κλασθεῖσα δὲ εὐθεῖα, τουτέστιν ἡ καμφθεῖσα, ὡς γωνίαν ποιεῖν, ἀπὸ μὲν τῆς ἐκτεταμένης γέγονεν, ἐκβᾶσα δὲ τὸ ἁπλοῦν καὶ οἷον εἰς μερισμὸν ὑποβᾶσα, 232, 39 καὶ γὰρ ἡ κεκλασμένη...τὴν τῶν εἰδοπεποιημένων σύστοιχον δηλοῖ γνῶσιν, ἡ δὲ ἐκταθεῖσα ὡς ὀρθὴ καὶ ἀκαμπὴς τῆς τῶν ὅρων καὶ τελειοτήτων γνώσεως εἴληπται σύμβολον. To the same effect on the main issue Philop. 526, 5 ὥσπερ γὰρ ἡ αὐτὴ εὐθεῖα τῷ μὲν ὑποκειμένῳ ἡ αὐτή ἐστι, τῷ δὲ λόγῳ διάφορος (ἡ γὰρ νῦν εὐθεῖα οὖσα δύναται κλασθῆναι καὶ ἐπικαμπὴς γενέσθαι), οὕτω καὶ ὁ νοῦς ὁ αὐτὸς ὢν τῷ ὑποκειμένῳ ἄλλοτε μὲν εὐθείᾳ ἀναλογεῖ, ὅτε καὶ καθ' ἑαυτὸν ἐνεργεῖ καὶ τὰ ἄυλα οἶδεν, ἄλλοτε δὲ κεκλασμένῃ εὐθείᾳ ἐπικαμπτόμενος πρὸς τὴν αἴσθησιν καὶ ὀργάνῳ αὐτῇ κεχρημένος, ὅτε καὶ τὰ ἔνυλα οἶδεν. The opposite view was maintained by Zabarella. According to him, the sensitive faculty producing knowledge of particular flesh is compared to the straight line, the same faculty producing the knowledge of its quiddity to the broken line, and he insists that κεκλασμένη = fracta, non inflexa. The straightness of the line indicates that the sense-impression (or its product, the φάντασμα) by a direct and immediate course is presented to intellect, whereas knowledge of the quiddity implies reflexion (ἀνάκλασις). Teichmüller, too, makes the straight line stand for the sensitive faculty and by adducing *Anal. Post.* II. 19, 99 b 36 sqq. endeavours to show that the formation of the universal from isolated impressions of sense may be compared to the bending of a line back upon itself. So also Wallace: "And the

meaning would therefore seem to be that sense and reason stand to one another in cognition as two processes, of which the one goes directly at its object, whereas the other returns upon itself....In sense, in other words, the mind and the object lie apart—a straight line leads from one to the other, but there is no means of returning to the mind; in reason the object of knowledge, the essential idea, is itself rational, so that the mind *returns upon itself*." Trendelenburg called attention to the importance of *ὅταν ἐκταθῇ*, which must be taken closely with *ἔχει*: Inflexa linea e recta nata posterius aliquid est, cui recta tanquam prius subest. Si inflexam in rectam rursus extenderis, princeps illud et causa restituitur. Ita mens, si notionem, quae rem constituit tanquam lex et causa, intellexerit, hoc, quod subest, sublatis, quae materiae natura notioni acciderunt, in dignitatem restituit suam (p. 393). M. Rodier, by the entirely different interpretation which, as stated above, he gives of the whole passage, is led to explain the simile as illustrating, not one of two possible conceptions of the relation between intellect and sense, but the relation of the intellect apprehending *τὸ σύνολον τὸ καθόλου* to the intellect apprehending *τὸ τί ἦν εἶναι*. According to him, intellect when it takes account of form and matter conjoined in *τὸ σύνολον τὸ καθόλου* resembles the bent line, when it takes account of form only it resembles the straight line: "L'acte par lequel il saisit une forme pure est, en effet, un et indivisible comme cette forme même et ressemble à la ligne droite. Au contraire, l'acte par lequel il pense une forme avec sa matière logique est déjà une discursion, il implique une pluralité d'éléments unis, quoique distincts, comme la ligne brisée" (II., p. 448 sq.).

b 18. **ἐπὶ τῶν ἐν ἀφαιρέσει ὄντων**, i.e. abstractions, and more especially mathematical objects: cf. first *note* on 403 b 15.

b 18. **τὸ εὐθύ.** Mathematical objects, though at first sight they might seem pure abstractions, have, in fact, matter as well as form: cf. *Metaph.* 1036 b 35 *ἔσται γὰρ ὕλη ἐνίων καὶ μὴ αἰσθητῶν*, i.e. a logical or intelligible, not sensible, matter, *ὕλη λογική, νοητή*, 1036 a 9 *ὕλη δ' ἡ μὲν αἰσθητή ἐστιν ἡ δὲ νοητή...νοητὴ δὲ ἡ ἐν τοῖς αἰσθητοῖς ὑπάρχουσα μὴ ᾗ αἰσθητά, οἷον τὰ μαθηματικά*, viz. continuity, *τὸ συνεχές*, or more precisely, continuity in space, extension. Thus the straight line, *τὸ εὐθύ*, may be analysed into its matter, continuity or length, and its form, tentatively assumed to be duality.] Though the geometer's line is length without breadth or thickness, and therefore abstract, yet extension is a sort of geometrical matter which enables the conceptions of mathematics to be after all concrete. **ὡς τὸ σιμόν**, int. *ἐστι*. That is, *τὸ εὐθύ*, like *τὸ σιμόν*, is *σύνθετόν τι*. The inseparable matter in the one case is *τὸ συνεχὲς* and in the other *ῥίς*. The form is (here, at least) in the one case duality and in the other *κοιλότης*.

b 19. **μετὰ συνεχοῦς γάρ**, int. *ἐστι τὸ εὐθύ*. See *Phys.* VI. 1, 231 a 25 *ἡ γραμμὴ μὲν συνεχές*. This is true of the mathematician's line, the abstraction, which still has extension for its matter. Cf. *De Mem.* 1, 450 a 7 *οὐκ ἐνδέχεται νοεῖν οὐδὲν ἄνευ τοῦ συνεχοῦς*. When, however, the line is realised, any particular actual line is *ἀεὶ μετὰ σώματος*, 403 a 15.

b 20. **ἄλλο**, int. *ἐστὶ τοῦ εὐθέος*. The reading of cod. E, *ἄλλῳ*, is intelligible. We must then understand *κρίνει* to govern *τὸ τί ἦν εἶναι* here and *τὸ εὐθὺ ὡς τὸ σιμὸν* above, the subject as before being *τὸ κρῖνον*. Torstrik's defence of *ἄλλῳ* (*Jahrb. f. class. Philol.* 1867, p. 245) turns on the tautology of the sentence with *ἄλλο*, a mere echo of *ἕτερον*: "But its *τί ἦν εἶναι*, if there is a difference between straightness and the straight line, is something distinct." But this objection is met by Zabarella, who anticipated Bonitz in rejecting *ἄλλῳ* in favour of *ἄλλο*, not on MS. authority, of which he was unaware, but on that of Them., Simpl. and the reason of the case. The clause b 19 *εἰ ἔστιν...20 εὐθύ*, he observes,

merely means that the question of this identity of τὸ εὐθὺ and τὸ εὐθεῖ εἶναι is reserved for the metaphysician: it is enough for our purpose to assume that they are different, precisely as a similar assumption was made at b 10 *supra*.

b 20. ἔστω γὰρ δυάς, int. τὸ εὐθεῖ εἶναι. Cf. *Metaph.* 1043 a 29 δεῖ δὲ μὴ ἀγνοεῖν ὅτι ἐνίοτε λανθάνει πότερον σημαίνει τὸ ὄνομα τὴν σύνθετον οὐσίαν ἢ τὴν ἐνέργειαν καὶ τὴν μορφήν, οἷον...γραμμὴ πότερον δυὰς ἐν μήκει ἢ ὅτι δυάς, 1036 b 12 καὶ ἀνάγουσι [int. τινὲς] πάντα εἰς τοὺς ἀριθμούς, καὶ γραμμῆς τὸν λόγον τὸν τῶν δύο εἶναί φασιν. καὶ τῶν τὰς ἰδέας λεγόντων οἱ μὲν αὐτογραμμὴν τὴν δυάδα, οἱ δὲ τὸ εἶδος τῆς γραμμῆς. The form of the mathematical line is perhaps, A. concedes to the Pythagoreans and Platonists, the number Two, which represents the line, if One represents the point: cf. 404 b 20, 22. A straight line is determined, the geometer would say, by any two points in it, and hence Euclid's definition, which is a modification of Plato's in *Parm.* 137 E. To Plato and the mathematicians of his day the point travels and becomes Two in the line, just as the line generates the surface and the surface the solid, 409 a 4 sq.

b 20. ἑτέρῳ. That in this connexion there is no difference between ἑτέρῳ and b 13 ἄλλῳ seems clear: cf. *Metaph.* 1016 b 21 οὐ ταὐτὸ δὲ ἐν πᾶσι τοῖς γένεσι τὸ ἕν. ἔνθα μὲν γὰρ δίεσις, ἔνθα δὲ τὸ φωνῆεν ἢ ἄφωνον· βάρους δ' ἕτερον καὶ κινήσεως ἄλλο, *De Sensu* 7, where the hypothesis first expressed 448 b 20 by ἅμα μέν, ἑτέρῳ δὲ τῆς ψυχῆς αἰσθάνεσθαι is afterwards expressed 449 a 5 by ἄλλῳ μὲν γλυκέος, ἄλλῳ δὲ λευκοῦ αἰσθάνεται μέρει.

b 21. ἢ ἑτέρως ἔχοντι. The subject knows concrete straightness by one faculty, its form, duality, by another, or rather by a different phase of the same faculty: ἤ, "vel potius," introduces the view which A. thinks the more correct. It must be intellect and not sense which grasps, not only the essence, straightness, but also the concrete mathematical line with its ὕλη νοητή: cf. the use of νοεῖν 431 b 13, 16 (*bis*). But, if the concrete line is analogous to σιμόν, the attitude of intellect in apprehending it will be analogous to that of sensitivity when it apprehends flesh. And, if so, this is a different attitude from that of intellect when it apprehends pure form, whether of physical flesh or mathematical straightness. Cf. Them. 96, 30—97, 1 H., 178, 6—21 Sp., especially 96, 34 H., 178, 12 Sp. ἐπὶ τούτων δὴ τῶν ἐξ ἀφαιρέσεως ἄμφω ὁ νοῦς ἔοικε κρίνειν, λέγω δὲ ἄμφω τό τε σύνθετον ἐκ τοῦ ὑποκειμένου καὶ τῆς μορφῆς καὶ αὐτὴν τὴν μορφήν, ἀλλ' οὐχ ὁμοίως ἔχων καὶ τηνικαῦτα, ἀλλὰ καὶ ἐπὶ τούτων ποτὲ μὲν ὡς ἁπλοῦς, ποτὲ δὲ ὥσπερ σύνθετος γινόμενος.

b 21 καὶ ὅλως...22 τῆς ὕλης. The genitive τῆς ὕλης goes with χωριστά, "separable from matter." By τὰ πράγματα are meant the objects, things as they are known, τὰ ἐπιστητά: cf. 430 a 20, *Anal. Post.* II. 19, 100 b 16 sq. (if the last passage be taken in connexion with *Eth. Nic.* 1140 b 31 sqq.). These objects may be either immersed in matter, like τὸ σιμόν, or separable from it in thought, like τὸ εὐθύ (οὐ κατὰ μέγεθος ἀλλὰ κατὰ λόγον χωριστά). ὅλως generalises the distinction between the concrete thing and its form or quiddity, a distinction of which A. has already given two particular examples, viz. σάρξ and σαρκὶ εἶναι, εὐθὺ and εὐθεῖ εἶναι: transiri enim a singulis exemplis ad notionem universalem significat part. ὅλως (Bz. ad *Metaph.* 990 b 17). Cf. second *note* on 403 a 7.

b 22. οὕτω καὶ τὰ περὶ τὸν νοῦν, int. χωριστὰ τῆς ὕλης ἐστί, where τὰ περὶ τὸν νοῦν may be a periphrasis for νοῦς. Cf. *Ind. Ar.* 579 a 44 interdum ita usurpatur [int. formula οἱ περί τινα] ut ab ipso personae nomine non multum differat. But the idiom is not confined to proper names. Cf. Them. 97, 5 H., 178, 27 Sp. ἡ τοῦ νοῦ θεωρία, Simpl. 234, 12 αἱ τοῦ νοῦ τούτου θεωρίαι. Prisc. Lyd., *Metaphrasis in Theophr.* Περὶ νοῦ, p. 34, 1 ed. Byw., informs us that Theophrastus agreed with A. in this statement (ἀμφότεροι ἀποφαίνονται), of which he offers

three interpretations. Hence the ancient commentators speak of ὁ ἄυλος νοῦς and ὁ ἔνυλος νοῦς. According to the degree to which the object of thought is involved in matter or free from it, so it is with the mind that thinks the object. Three modes of apprehension have been noticed in this chapter, (1) sense, which apprehends the qualities of concrete things, (2) mind when it apprehends the ἔνυλα εἴδη and (3) mind when it apprehends the ἄυλα εἴδη. But (2) and (3) are different attitudes of the same faculty. This sentence contains the conclusion of the whole passage: νοῦς in its operations can separate itself to a greater or less degree from matter; to a less degree when it raises the single notion from the sense-image by abstraction; to a greater degree when it thinks that which is common to the species and the specific essence. In both cases it thinks universals, but the latter are higher universals than the former. Cf. Them. 97, 5 H., 178, 27 Sp. ὡς οὖν ταῦτα [τὸ εὐθὺ or τὸ τρίγωνον as examples of τὰ πράγματα] τῷ λόγῳ χωρίζεσθαι μόνῳ δύναται, καθ' αὑτὰ δὲ οὐκ ἂν ὑποσταίη, οὕτω καὶ ὁ νοῦς χωρίζειν αὐτὰ τῷ λόγῳ μόνῳ ἐπιχειρεῖ.

429 b 22—430 a 9. Two problems remain. The first is: if mind is, according to Anaxagoras, unmixed and impassive, how can it think? Thinking is being acted upon, and to act and be acted upon implies some community between agent and patient [§ 9]. Further, how can mind be an object of thought to itself? This might be taken to imply that there is intelligence in all objects of thought, if the object of thought is everywhere one in kind: or else that there is in intellect an alien element which makes it an object of thought, a hypothesis which is contrary to the view that it is simple and unmixed [§ 10]. The answer to the first question is to be found in the consideration that mind is actually nothing until it thinks. Compare the subject to a blank writing-tablet with a capacity of receiving written characters [§ 11]. As to the second problem, that mind can be its own object follows from the consideration (1) that in the case of immaterial things that which thinks and that which is thought are one and the same, while (2) in material things such objects of thought are only potentially present. This solution suggests the enquiry whether mind is always thinking, an enquiry which must be reserved [§ 12].

The first problem is obviously suggested by a passage in the previous exposition, viz. 429 a 13—20, as the second reference to Anaxagoras shows. The second problem also, like the first, appears to be suggested by a previous remark, viz. 429 b 9, where νοῦς is said under certain conditions to know itself, which implies that it is νοητός. I am therefore not inclined to accept Prof. Bywater's emendation of that line, which would excise all previous reference to νοῦς cognizing itself.

429 b 24. ὥσπερ φησὶν Ἀναξαγόρας. See *notes* on 405 b 19, 429 a 18 *supra*. As is there explained, there is no evidence to show that Anaxagoras himself used the word ἀπαθὲς of his νοῦς, while A. beyond all doubt does use the term, like ἁπλοῦν and καθαρόν, as a predicate of the Anaxagorean νοῦς. If this be granted, it seems hypercritical to bracket 429 b 23 ἀπαθὲς or to substitute ἀμιγὲς for it. **πῶς νοήσει.** The problem was raised 405 b 21 as a difficulty which Anaxagoras had overlooked.

b 25. πάσχειν τι, as in 429 a 14, where see *note*.

b 25. ᾗ γάρ τι κοινὸν ἀμφοῖν. Cf. *De Gen. et Corr.* I., c. 7, especially 323 b 29 ἀλλ' ἐπεὶ οὐ τὸ τυχὸν πέφυκε πάσχειν καὶ ποιεῖν, ἀλλ' ὅσα ἢ ἐναντία ἐστὶν ἢ ἐναντίωσιν ἔχει, ἀνάγκη καὶ τὸ ποιοῦν καὶ τὸ πάσχον τῷ γένει μὲν ὅμοιον εἶναι καὶ ταὐτό, τῷ δ' εἴδει ἀνόμοιον καὶ ἐναντίον· πέφυκε γὰρ σῶμα μὲν ὑπὸ σώματος, χυμὸς δ' ὑπὸ χυμοῦ, χρῶμα δ' ὑπὸ χρώματος πάσχειν, ὅλως δὲ τὸ ὁμογενὲς ὑπὸ τοῦ ὁμογενοῦς.

τούτου δ' αἴτιον ὅτι τἀναντία ἐν ταὐτῷ γένει πάντα. ποιεῖ δὲ καὶ πάσχει τἀναντία ὑπ' ἀλλήλων. ὥστ' ἀνάγκη πῶς μὲν εἶναι ταὐτὰ τό τε ποιοῦν καὶ τὸ πάσχον, πῶς δ' ἕτερα καὶ ἀνόμοια ἀλλήλοις. See also *De A.* 416 b 35 sqq., where A. refers to *De Gen. et Corr.* I., c. 7.

b 26. εἰ νοητὸς καὶ αὐτός, int. ὁ νοῦς ἐστιν ἀπορήσειε ἄν τις.

b 27. ἢ γὰρ τοῖς ἄλλοις νοῦς ὑπάρξει. If νοῦς is νοητός, two alternative hypotheses are conceivable: it is νοητὸς either (1) καθ' αὑτόν, οὐ κατ' ἄλλο τι or (2) κατ' ἄλλο τι, οὐ καθ' αὑτόν. The first hypothesis, expanded in the clause b 27 εἰ μὴ κατ' ἄλλο....28 εἴδει leads to the conclusion of the lemma, "all νοητὰ will have νοῦς predicable of them," "all objects of thought will themselves think": cf. Plato, *Parm.* 132 C ἐκ νοημάτων ἕκαστον εἶναι καὶ πάντα νοεῖν. Though A. does not say so, this result is paradoxical. The consequence to which the second hypothesis leads is contained in the clause b 28 ἢ μεμειγμένον...29 τἆλλα, "νοῦς will have in it an admixture of something, alien to its own nature, which renders it νοητός." The second hypothesis is not directly stated, but is to be inferred from the consequence to which it leads.

b 27. εἰ μὴ κατ' ἄλλο, if it is only by and in itself (in other words, καθὸ νοῦς ἐστί) and not through something else that νοῦς is an object of thought. See the second *note* on 406 a 4. If in the act of thought the object is always mind itself, we must suppose other things to have an admixture of mind in them in order to be thought.

b 28. ἓν δέ τι τὸ νοητὸν εἴδει. We must further assume that the object of thought is always one in kind or specifically the same. The content of thought is homogeneous. The attribute "thinkable," νοητός, must bear one and the same sense, wherever applied: it must not be an ambiguous term. If, then, on this first hypothesis some νοητὸν is νοῦς *quâ* νοητόν, this must be equally true of all νοητά. In fact, on this view, whatever its object, it is itself that mind thinks and so there is κοινόν τι ἀμφοῖν. The two problems are really more closely related than at first sight would appear.

b 28 ἢ μεμειγμένον...29 ὥσπερ τἆλλα. If it is not *per se* that mind is an object of thought, it must be in virtue of something else, κατ' ἄλλο τι. Thus we pass on to the second hypothesis which, as it is not stated, has to be supplied, viz. that νοῦς requires to render it νοητὸς something else in it other than itself. If something other than mind is the object of mind, the other something must always be in mind for that purpose. In that case this something else, which makes mind νοητόν, must be regarded as a foreign admixture, and thus the condition laid down by Anaxagoras, and accepted by A., that mind is ἀμιγής, is violated. In this connexion it is interesting to notice a remark made by A. in his polemic against the Platonic ideas *Metaph.* 991 a 14 sqq., 1079 b 18 sqq. that, if the ideas existed in the participant particulars, they might be considered causes of their being: οὕτω μὲν γὰρ [int. ἐνυπάρχοντά γε τοῖς μετέχουσιν] ἴσως αἴτια δόξειεν ἂν εἶναι ὡς τὸ λευκὸν μεμιγμένον τῷ λευκῷ. And this view A. proceeds to attribute to Anaxagoras: 1079 b 20 ἀλλ' οὗτος μὲν ὁ λόγος...ὃν Ἀναξαγόρας μὲν πρότερος [πρῶτος 991 a 17]...ἔλεγε διαπορῶν κτέ.

b 29 ἢ τὸ μὲν πάσχειν...31 νοῇ. Here begins the solution of the first problem, as is shown by ἤ: see *note* on 403 b 8. The words κατὰ κοινόν τι must be joined with πάσχειν, not with διῄρηται. I take διελεῖν as "to explain": from *Ind. Ar.* 180 a 22 sqq. it appears that the verb often means to distinguish, analyse, discuss, e.g. 402 a 23, 25: in *Metaph.* 1048 a 27 διαιροῦσιν bears the same meaning as the preceding διορίσωμεν (a 26). The clause introduced by ὅτι must contain the purport of this previous distinction, i.e. ὅτι="to the effect that": it is not a causal clause. Such an explanation, distinguishing two meanings of πάσχειν,

was given 417 b 2 sqq. Cf. 417 a 18, *note* on ὑπὸ τοῦ ὁμοίου. The community between potential intellect and its objects is that the former is capable of being transformed into the latter. This was stated 429 a 24, so that the πάσχειν of 429 a 14 sqq. satisfies the condition κατὰ κοινόν τι. The relation between τὸ πάσχον and τὸ ποιοῦν is here "a sort of community": in the analogous passage 417 b 3 sqq. it is described as a carefully qualified similarity, σωτηρία μᾶλλον τοῦ δυνάμει ὄντος ὑπὸ τοῦ ἐντελεχείᾳ ὄντος καὶ ὁμοίου **οὕτως ὡς δύναμις ἔχει πρὸς ἐντελέχειαν**. We cannot too strongly emphasise the strained meaning put upon all these terms when they are transferred from the mutual action and reaction of things corporeal to the mental sphere: πάσχειν is ἐνεργεῖν 417 a 15, b 1 (cf. 431 a 4 sqq.), τὸ πάσχον is ἀπαθὲς 429 a 15, and the process which is really εἰς αὐτὸ ἐπίδοσις καὶ εἰς ἐντελέχειαν 417 b 6 sq. is not only said to be ἡ ἐπὶ τὰς ἕξεις μεταβολὴ καὶ τὴν φύσιν 417 b 15 sq., but is even more improperly described as ἀλλοίωσις, κίνησις, πάθος. If intellect were a corporeal thing and τὰ νοητὰ corporeal things acting upon it, the κοινόν τι ἀμφοῖν ὑπάρχον of b 25 would be a common matter or substratum: *De Gen. et Corr.* I. 6, 322 b 18 sq., I. 7, 323 b 29—324 a 14. Cf. Them. 97, 11—14 H., 179, 4—8 Sp.

b 30 δυνάμει...31 ἐντελεχείᾳ οὐδέν, a pure potentiality, actually non-existent and therefore in no actual relation to an actually existing νοητόν. A.'s solution, then, amounts to this: when the mind thinks, we may regard the object of thought as acting upon it. But this is no ordinary case of physical interaction. Agent and patient have this in common, that the latter, the mind, is potentially the former, its objects, and when it actually thinks it becomes identical with them. A. goes on to say that the relation of what it is before thinking to what it is when actually thinking may be illustrated by the relation of the unwritten tablet to the same tablet with writing upon it.

b 31. δ<υνάμ>ει δ' οὕτως. No satisfactory explanation of the vulgate is forthcoming. The simplest expedient, which, so far as I know, has not occurred to anyone, would be to supply after δεῖ δ' οὕτως the words δυνάμει πως εἶναι τὰ νοητὰ τὸν νοῦν from the preceding sentence. But even then there is not much force in δεῖ, as will be seen if we compare, e.g., 429 a 15 and a 18, where the conditions are stated upon which a result necessarily follows. According to the view which has found most favour, we should understand after δεῖ the verb ὑπολαβεῖν or something equivalent. But, in the first place, it is singular that there should be such an important omission, especially as there is nothing in the context to suggest the missing word. A. goes to great lengths in ellipse, but generally the context furnishes a clue. Besides, ὑπολαβεῖν is not enough to supply. Accordingly, Torstrik supplements thus: δεῖ δ' οὕτως ὑπολαβεῖν (γίγνεσθαι τὸ νοεῖν) ὥσπερ ἐν γραμματείῳ ᾧ μηθὲν ὑπάρχει ἐντελεχείᾳ γεγραμμένον (γίγνεται τὸ γράφεσθαι). He gets γίγνεσθαι τὸ νοεῖν from 429 a 13 πῶς ποτὲ γίνεται τὸ νοεῖν, which is a long way off. Torstrik's supplement gives a fair sense, but so much cannot be said for M. Rodier's apparently more simple explanation. He would understand συμβαίνειν with δεῖ, removing the stop before ὅπερ συμβαίνει, so that the antecedent of ὅπερ is the subject of the infinitive συμβαίνειν understood, and in fact of the whole sentence. Thus we get: "and what takes place in that which concerns the intellect must take place as in a writing-tablet on which there is nothing actually written." Why "must"? So long as we supply ὑπολαβεῖν, δεῖ is perfectly in place, δεῖ δ' ὑπολαβεῖν being frequently used by A. to introduce his explanation of a process, his conception how something goes on. But when he is describing a fact, συμβαίνει is sufficient. Cf. 408 b 20 νῦν δ' ἴσως ὅπερ ἐπὶ τῶν αἰσθητηρίων συμβαίνει. The intrusion of δεῖ or any verb of necessity would be confusing, though not in the same degree as

the imperfect ἔδει. Moreover, by the position of the words, ὅπερ συμβαίνει ἐπὶ τοῦ νοῦ suggests a distinct clause.

It is surprising, if δεῖ were the genuine reading, that the commentators should all fight shy of it. The lemma of Simplicius certainly contains the word δεῖ, but so frequently in the ancient commentators are lemma and interpretation inconsistent that we are irresistibly led to conclude that the lemmas have been tampered with. Alex. Aphr. mentions the simile in his own *De An.* (84, 24 sqq.) and takes occasion to correct the supposition that it is the tablet itself which answers to νοῦς ὑλικός. On the contrary, he maintains that it is the aptitude of the tablet for receiving written characters, not the tablet itself, which corresponds to the potential intellect. He gives no clue whatever to the reading. Take Themistius, again. In his paraphrase of the passage (97, 19 sqq. H., 179, 16 sqq. Sp.) there are three distinct adaptations of the text. Piece them together and we get the following: ὁ δὲ νοῦς, ὥσπερ εἴρηται, δυνάμει μὲν ἅπαντά ἐστι τὰ νοητά, ἐντελεχείᾳ δὲ οὐδὲν πρὶν ἂν νοῇ, ἀλλ' ὥσπερ ἐν γραμματείῳ μηδὲν ἔχοντι γεγραμμένον ἐντελεχείᾳ ὅταν γραφῇ τὰ γράμματα, τελείωσιν ἂν εἴποις τοῦ γραμματείου τὰ γεγραμμένα, οὐ πάθος· οὕτω συμβαίνει καὶ ἐπὶ τοῦ νοῦ. Nearly every word of the vulgate is here introduced, except δεῖ. The interpretation of Simplicius (236, 13 sqq.) takes no account of δεῖ and, if anything, suggests δυνάμει. Nor is there any hint of δεῖ in Philoponus, whose brief note is, 533, 25, ἀγράφῳ γὰρ ἔοικε γραμματείῳ, and this is not because he has overlooked the simile, for he dwells at length upon the egregious misinterpretation of Iamblichus, who tried to make out that ἄγραφον = κακόγραφον. Again, Priscianus Lydus, who twice mentions the simile, 26, 26 sqq., 35, 23 sqq., lends no support to the reading δεῖ. See Appendix, *ad finem*. Lastly, Sophonias 125, 37 sqq. gives a paraphrase which betrays the influence of Alexander, the subjects of the chapter being treated in an arbitrary manner and not in the order of the Aristotelian text. Thus, like Alex. Aphr., Sophonias brings the simile into connexion with the τόπος εἰδῶν of 429 a 27. It would seem hardly possible that the text of which this, such as it is, is a paraphrase, can have contained δεῖ, but highly probable that in place of δεῖ it contained δυνάμει. Mr Cornford's emendation δυνάμει for δεῖ (*Proceedings of the Camb. Phil. Soc.* 1906, p. 13) assumes a compendium δυ,, which, according to Bast, pp. 805 sq., actually occurs in extant MSS. for δύναμις: through itacism this might be confused with δεῖ. Cf. δ^{υ}, which Diophantus regularly uses for the algebraical δύναμις. The sense is excellent: "but it is all objects potentially in the same manner as in a tablet, which has not been actually written upon, the writing exists potentially. This is exactly the case with the mind."

430 a 1. ὥσπερ ἐν γραμματείῳ...γεγραμμένον, int. δυνάμει ἐστὶ τὰ γράμματα. The writing-tablet here must not be understood to represent the mind. As Alexander points out, it is rather the aptitude of the tablet while yet uninscribed which corresponds to the mind, which is potentially everything, yet previously to thought actually nothing: cf. Alex. Aphr. *De An.* 84, 21 οὐδὲν ἄρα τῶν ὄντων ἐνεργείᾳ ἐστὶν ὁ ὑλικὸς νοῦς, ἀλλὰ πάντα δυνάμει. πρὸ γὰρ τοῦ νοεῖν οὐδὲν ὢν ἐνεργείᾳ, ὅταν νοῇ τι, τὸ νοούμενον γίνεται, εἴ γε τὸ νοεῖν αὐτῷ ἐν τῷ τὸ εἶδος ἔχειν τὸ νοούμενον. ἐπιτηδειότης τις ἄρα μόνον ἐστὶν ὁ ὑλικὸς νοῦς πρὸς τὴν τῶν εἰδῶν ὑποδοχὴν ἐοικὼς πινακίδι ἀγράφῳ, μᾶλλον δὲ τῷ τῆς πινακίδος ἀγράφῳ, ἀλλ' οὐ τῇ πινακίδι αὐτῇ. The tablet, Alex. reminds us, is an actually existent thing and, as such, whether written upon or unwritten, is comparable to the living animal to whom the mind belongs. Priscianus Lydus, who makes the tablet stand for potential intellect, is also worth citing: 35, 25 τὸ ἄγραφον γραμματεῖον...ὡς παράδειγμα τοῦ δυνάμει νοῦ προφερόμενον, ἵνα καὶ τὸ ἄγραφον ὡς ἐν νῷ θεωρῶμεν,

ἔχοντι μὲν κατ' οὐσίαν τὰ εἴδη καὶ τέλεια ἔχοντι, ὑπὸ δὲ τοῦ πρώτου νοῦ τελειουμένῳ καὶ ἐντελεχείᾳ γραφομένῳ.

a 2. ὅπερ συμβαίνει ἐπὶ τοῦ νοῦ. Until thought is actually operant, the *δυνάμει νοητὰ* are not *ἐντελεχείᾳ νοητά.* Mind has *δυνάμει* the interpretation of impressions received from without by sense (cf. 432 a 4 *ἐν τοῖς εἴδεσι τοῖς αἰσθητοῖς τὰ νοητά ἐστι*), in so far as it is capable of thinking the universal. The difficulty arises from *πάσχειν*: in the next chapter we shall hear that there is in *νοῦς* a part which suffers and a part which is incapable of suffering. **καὶ αὐτὸς δέ,** int. *ὁ νοῦς.* Here A. turns to consider the second problem; that is, in Torstrik's words, to distinguish between *τὸ νῷ εἶναι* and *τὸ νοητῷ εἶναι.* The view that *νοῦς* is *νοητὸς* follows from the main proposition of *Metaph.* 1072 b 20 *ἑαυτὸν δὲ νοεῖ ὁ νοῦς κατὰ μετάληψιν τοῦ νοητοῦ*, where A. is describing the divine mind, which is *τὸ πρῶτον κινοῦν ἀκίνητον.* The difficulties attending this conception are subsequently discussed *Metaph.* Λ., c. 9, a chapter which should be carefully compared: cf. 1074 b 21 sqq., 1074 b 33 sq. and 1075 a 3 cited in note *infra* on a 4. That the process of thinking in the human mind and in the divine mind is conceived by A. as analogous seems clear from such passages as 1072 b 18—26, 1075 a 5—10.

a 3. ἐπὶ comes to much the same as a 6 *ἐν*: cf. *Metaph.* 988 a 12 *καθ' ἧς* [int. *ὕλης*] *τὰ εἴδη μὲν ἐπὶ τῶν αἰσθητῶν τὸ δ' ἓν ἐν τοῖς εἴδεσι λέγεται.* We think a thing either in the concrete, man, triangle, or in the abstract, humanity, triangularity. In the one there is matter of some sort, the object is a *σύνολον*, though *καθόλου*, *Metaph.* 1035 b 27 sqq., 1037 a 1 sqq., 1036 b 22 sqq. In the other case there is no matter.

a 3. τῶν ἄνευ ὕλης. Cf. first *note* on 429 b 12. These are *πρῶται οὐσίαι*, simplices res, quae non habent distincta a substantia accidentia, nec coniunctam cum actu aliquo potentiam contrarii, sed integrae sunt substantiae et *ἐνέργειαι* (Bonitz *ad Metaph.* Θ., c. 10, p. 410). They are the *ἀδιαίρετα* of III., c. 6 (cf. *Metaph.* 1075 a 6 *ἢ ἀδιαίρετον πᾶν τὸ μὴ ἔχον ὕλην*, 1045 b 23 *ὅσα δὲ μὴ ἔχει ὕλην, πάντα ἁπλῶς ὅπερ ἕν τι*, 1074 a 33 *ὅσα ἀριθμῷ πολλά, ὕλην ἔχει*), and the process by which they are apprehended is compared to direct contact, i.e. to the lower faculty of sense. Cf. 407 a 10 sqq., *Metaph.* 1051 b 23—25, 1072 b 20 sq. Pariter [int. atque sensus] mens activa, *ὁ ποιητικὸς νοῦς*, sibi subiectas habet simplices aeternasque substantias, quae nihil sunt aliud nisi id ipsum substantiae et *ἐνέργειαι*, harumque cognoscit naturam (Bz. p. 410, *note*). Cf. 430 b 27—31. *Ἄνευ ὕλης* is virtually an adjective *ἀύλων.* We often find *μετὰ* and its complement similarly equivalent to an adjective: cf. *τὰ μετὰ παιδιᾶς = τὰ γελοῖα* *Eth. Nic.* 1177 a 4.

a 4. ἡ γὰρ ἐπιστήμη. The statement recurs 430 a 19 sq., 431 a 1. Cf. *Metaph.* 1074 b 38 *ἢ ἐπ' ἐνίων ἡ ἐπιστήμη τὸ πρᾶγμα; ἐπὶ μὲν τῶν ποιητικῶν ἄνευ ὕλης ἡ οὐσία καὶ τὸ τί ἦν εἶναι, ἐπὶ δὲ τῶν θεωρητικῶν ὁ λόγος [τὸ πρᾶγμα] καὶ ἡ νόησις. οὐχ ἑτέρου οὖν ὄντος τοῦ νοουμένου καὶ τοῦ νοῦ, ὅσα μὴ ὕλην ἔχει, τὸ αὐτὸ ἔσται καὶ ἡ νόησις τῷ νοουμένῳ μία.* It should be observed that in that context A. has previously told us that *τὸ εἶναι νοήσει* is not the same as *τὸ εἶναι νοουμένῳ*: besides, experience shows that knowledge, sensation, opinion and thought have something else for their primary object, and, when they apprehend themselves, it is only as a subordinate object.

a 5. οὕτως, int. *θεωρητικῶς.*

a 5 τοῦ δὲ μὴ ἀεὶ νοεῖν...6 ἐπισκεπτέον: a parenthetical remark. The question is suggested by the conclusion that mind may have itself for object: and, as Philop. observes, 528, 11, mind is always present to itself, *ἀεὶ δὲ πάρεστιν ἑαυτῷ ὁ νοῦς.* Why, then, if *τὸ νοοῦν* and *τὸ νοούμενον* be always present, should there be any intermission in the process of thinking?

a 6. ἐν δὲ τοῖς ἔχουσιν ὕλην. If from the sum of *νοητὰ* we subtract the pure forms or *πρῶται οὐσίαι, τὰ ἄνευ ὕλης*, to which the clause a 3 sq. relates, what remains? Merely the things which have matter, the really existing concrete particulars in the world, like trees or stones or men. Each of them is a *τόδε τι*, which can be analysed into form and matter, 412 a 6 sqq. Owing to the presence of matter their forms are *ἔνυλα εἴδη* (see *note* on 403 a 25, **λόγοι ἔνυλοι**) and, as such, as really existing outside the mind, essentially different from the forms which the mind receives in thinking them, *ἕκαστον τῶν νοητῶν*. Cf. 432 a 4 sqq. *ἐν τοῖς εἴδεσι τοῖς αἰσθητοῖς τὰ νοητά ἐστι, τά τε ἐν ἀφαιρέσει λεγόμενα, καὶ ὅσα τῶν αἰσθητῶν ἕξεις καὶ πάθη*. They are only potential *νοητὰ* unless and until the mind by thinking them transforms them from potential into actual *νοητά*. Cf. Them. 97, 37 H., 180, 13 Sp. *οὐδὲ γὰρ ἦν φύσει ταῦτα* [*τὰ*] *νοητά, λέγω δὲ τὰ ἔνυλα εἴδη, ἀλλ' ὁ νοῦς αὐτὰ νοητὰ ποιεῖ τῆς ὕλης ἀποτεμνόμενος, καὶ δυνάμει ἐστὶ νοητά, οὐκ ἐνεργείᾳ*. Hence A. infers that material things are not *νοῦς*, for it is not with potential *νοητὰ* but with actual *νοητὰ* that *νοῦς* is identical in the operation of thinking.

a 7. ἐκείνοις μὲν, int. *τοῖς ἔχουσιν ὕλην νοητοῖς*. **ἄνευ γὰρ ὕλης**, to be joined with *τοιούτων*, "to the exclusion of their matter."

a 8. τῶν τοιούτων, int. *τῶν ὕλην ἐχόντων*. The stone itself is not in the soul, 431 b 29, but, when we think the stone, we receive its form without its matter. **ἐκείνῳ δὲ**, int. *τῷ νῷ*, it will have the attribute *νοητός*: cf. 429 b 28 *ἐν δέ τι τὸ νοητὸν εἴδει*. The sentence is equivalent to the statement *ὁ νοῦς νοητὸς ἔσται*.

CHAPTER V.

In this chapter A. introduces a distinction between two forms of intellect conventionally known as the passive intellect, *ὁ παθητικὸς νοῦς*, and the active intellect, *ὁ ποιητικὸς νοῦς*. He does not himself use the latter term and the former is restricted to this chapter, where it occurs but once. I have followed the usual practice of editors in speaking of the two things distinguished by their conventional names, without thereby committing myself to any positive view as to the nature of the distinction. Everywhere else in his writings A. is content with the single term *ὁ νοῦς*, as if he accepted the essential unity of intellect. I need hardly remind the reader that A. regarded *νοῦς* as not confined to man: see 414 b 18 sq. As in *Metaph.* Λ., cc. 6—10, when dealing with intellect in higher beings than man and in the deity, A. often makes use of intellect in man for purposes of illustration, so where, as here and in *Eth. Nic.* X., cc. 7, 8, his subject is the human intellect, we may turn for illustration to the chapters in the *Metaphysics*. Indeed, a close study of Λ., c. 7 and c. 9 is almost indispensable to the elucidation of the present chapter. Throughout this chapter, as in the last, I have derived invaluable aid from Zabarella, who in the main follows Alex. Aphr. *De An.* 88, 17—91, 6, *Mantissa* 106, 19 sq.

430 a 10—25. The distinction recognised in the whole of nature between matter and the cause which brings it to actuality holds also of the soul. To the intellect which becomes all objects corresponds the intellect which makes all objects, the latter in its operation resembling light, which makes potential colours actual. Mind in this respect is separable, impassive, unmixed, being in its essence activity [§ 1]. Actual knowledge is identical with its object and, although in the individual potential knowledge, that is, the faculty of knowing, precedes actual knowledge, no such priority attaches to it absolutely. The priority of actual knowledge implies a mind in whose thought there is no

intermission. Only when separated by abstraction is this intellect seen in its true nature, which is immortal and eternal. We have no memory of the thought which is eternal, because the causal intellect is impassive. The passive intellect is perishable and without this (causal intellect) does not think.

430 a 10. ἐπεὶ. The apodosis is a 13 *ἀνάγκη ὑπάρχειν*.

a 10. ὥσπερ ἐν ἁπάσῃ τῇ φύσει. To *ὥσπερ* answers *καὶ* before *ἐν τῇ ψυχῇ*, a 13. By *φύσις* is meant "the physical universe," "external reality," *ὁ οὐρανὸς καὶ ἡ φύσις*, *Metaph.* 1072 b 14: or, as Zabarella puts it, "totus mundus generationi et interitui obnoxius": *Ind. Ar.* 835 b 50 sqq. The exhaustive analysis of production, whether by nature (*γένεσις*) or by art (*ποίησις*), which we find in *Metaph.* Z., cc. 7—9 starts by distinguishing *τὸ ἐξ οὗ*, matter, *τὸ ὑφ' οὗ*, the efficient cause or agent and *τὸ τί*, i.e. *ἔνυλον εἶδος* (1032 a 17 sq., 1033 a 24 sq.). In *Metaph.* Λ., c. 3 the language is slightly varied, *ὃ* replacing *ἐξ οὗ* and *εἰς ὃ* replacing *τί*. Both accounts relate to sensible substances, *αἰσθηταὶ οὐσίαι*. A. holds that an efficient cause is at once necessary and sufficient to account for the transition from matter, or potentiality, to form, or actuality, as is distinctly stated *Metaph.* 1045 a 30 *τί οὖν τούτου τὸ αἴτιον τοῦ τὸ δυνάμει ὂν ἐνεργείᾳ εἶναι, παρὰ τὸ ποιῆσαν, ἐν ὅσοις ἐστὶ γένεσις; οὐδὲν γάρ ἐστιν αἴτιον ἕτερον τοῦ τὴν δυνάμει σφαῖραν ἐνεργείᾳ εἶναι σφαῖραν, ἀλλὰ τοῦτ' ἦν τὸ τί ἦν εἶναι ἑκατέρῳ* [int. *τῇ ὕλῃ καὶ τῇ μορφῇ* or *τῇ δυνάμει καὶ τῇ ἐνεργείᾳ*], 1045 b 21 sqq. A. has therefore to find an efficient cause by which the transition of *νοῦς* from potentiality to actuality, which is implied in the foregoing chapter, is effected.

a 10 ἐστί τι τὸ μὲν...11 ἕτερον δὲ. The form of the sentence resembles 409 a 13 *ἔσται τι ἐν αὐτῷ τὸ μὲν κινοῦν τὸ δὲ κινούμενον*. So here *ὕλη τις* and *ποιητικόν τι* are the two factors to be distinguished, but the contrast is made more effective by *τὸ μὲν* and *ἕτερον δὲ* with anticipatory *τί*. See also 421 a 26 *χυμὸς ὁ μὲν...ὁ δέ*. Cf. for the analysis *Metaph.* 1033 b 12 *δεήσει γὰρ διαιρετὸν εἶναι αἰεὶ τὸ γιγνόμενον, καὶ εἶναι τὸ μὲν τόδε τὸ δὲ τόδε, λέγω δ' ὅτι τὸ μὲν ὕλην τὸ δ' εἶδος*, *ib.* b 18 sq., 1045 a 34 *καὶ αἰεὶ τοῦ λόγου τὸ μὲν ὕλη τὸ δ' ἐνέργειά ἐστιν*. **ὕλη ἑκάστῳ γένει**: cf. *Metaph.* 1089 b 27 *καίτοι δεῖ γέ τινα εἶναι ὕλην ἑκάστῳ γένει* [each category, cf. 410 a 18]· *πλὴν χωριστὴν ἀδύνατον τῶν οὐσιῶν*, *ib.* 1032 a 20—22, 1070 b 19 sq., also 1054 a 5, where from a comparison of 1053 b 22 sqq. it appears that colours, sounds, figures etc. are treated as *γένη*.

a 11. τοῦτο δὲ ὃ, that is, as Alex. Aphr., *De An.* 88, 19 completes the sentence, *τοῦτο δέ ἐστιν, ὃ πάντα δυνάμει ἐστὶ τὰ ἐν ἐκείνῳ τῷ γένει*. Matter as yet undifferentiated is potentially all the different individual members of a given class, though actually it is none of them.

a 11. ἕτερον δὲ, "and, in the second place, that which is agent in virtue of making all things." In *Metaph.* 1032 a 17 sqq. *τὸ ὑφ' οὗ* is described as *τῶν φύσει τι ὄντων* and *ἡ κατὰ τὸ εἶδος λεγομένη φύσις ἡ ὁμοειδής· αὕτη δ' ἐν ἄλλῳ*. Again, 1032 b 1 *εἶδος δὲ λέγω τὸ τί ἦν εἶναι ἑκάστου καὶ τὴν πρώτην οὐσίαν*, also 1033 b 7 *τὸ τί ἦν εἶναι· τοῦτο γάρ ἐστιν ὃ ἐν ἄλλῳ γίγνεται ἢ ὑπὸ τέχνης ἢ ὑπὸ φύσεως ἢ δυνάμεως*.

a 12. τῷ ποιεῖν πάντα. The exact sense which *ποιεῖν* bears in this connexion is thus explained *Metaph.* 1033 a 31 *τὸ γὰρ τόδε τι ποιεῖν ἐκ τοῦ ὅλως ὑποκειμένου τόδε τι ποιεῖν ἐστίν*: cf. 1033 b 2 *τοῦτο δὲ οὕτως ὅτι ἐκ τουδί, ὅ ἐστι χαλκός, τοδὶ ποιεῖ, ὅ ἐστι σφαῖρα*, b 22 *ποιεῖ καὶ γεννᾷ ἐκ τοῦδε τοιόνδε· καὶ ὅταν γεννηθῇ, ἔστι τόδε τοιόνδε*. Matter being imperishable and form eternal, there can be no making and no generation, *γένεσις ἁπλῆ*, of either the one or the other, 1033 a 28 sqq., 1033 b 5 sqq. This is why the term "creative reason" is so misleading.

a 12. οἷον ἡ τέχνη. This illustrative clause is loosely constructed. As *τέχνη*

here illustrates τὸ αἴτιον, τὸ ποιοῦν, not ἡ ὕλη, τὸ πάσχον, the expression οὕτως ἔχει would have seemed more appropriate than πέπονθεν. But cf. 424 a 14. A. uses this example because, as each art stands related to its proper matter in manufactured things, so stands the agent or efficient cause to the special matter of each genus in the things of nature. The production of health by the physician *Metaph.* 1032 b 5—30 and the construction of the brazen ring and sphere, 1033 a 28—b 11, are stock examples. Iron is potentially all manufactured iron implements, i.e. all the members of the genus. The art of iron manufacture in the soul of the maker (cf. 1032 a 32 sq., b 5, b 22 sq.) is an active principle by which out of the iron all the implements are made: for without some agent the material cannot pass from potence into act (*Metaph.* 1071 b 29 sq.) and so make the implements (πλὴν ἀπὸ ταὐτομάτου, 1032 a 28 sqq., b 23, 1034 a 9 sqq.).

a 13. ἀνάγκη. The construction is, as suggested above, ἐπεί, ὥσπερ...φύσει, ἐστί τι τὸ μὲν...ἕτερον δὲ..., ἀνάγκη καὶ...ὑπάρχειν, "since there is, firstly, matter and, secondly, efficient cause, these differences must be found, not only in external nature, but also in the soul." On this view the clause ὥσπερ...φύσει should properly come in the apodosis after ἀνάγκη. The only alternative is to take these words with ἐστί, which leaves ἐπεὶ without a verb and the sentence anacoluthic. The conclusion must be necessary, not probable. The argument does not prove the existence of a passive intellect. We already know that there is a potential or receptive intellect, a capacity of being affected by intelligibles and becoming thus actualised. The receptive intellect is rather the means by which the existence of the active intellect is proved. As Zabarella says, datur intellectus possibilis, qui naturam habet patientem et...potest transire de potentia ad actum. Ergo datur ex necessitate aliquod agens quod ducat intellectum possibilem de potentia ad actum. As in 412 a 6 sqq. we examined the composite substance, οὐσία συνθέτη, ζῷον ἔμψυχον, to find something, namely body, corresponding to substratum or δύναμις and something else, namely soul, corresponding to form or actuality, so here we are told to look in the soul for a counterpart of these fundamental differences found in the natural world. The word ψυχῇ here would be more precisely τῇ διανοητικῇ ψυχῇ.

a 14. καὶ ἔστιν ὁ μὲν τοιοῦτος νοῦς, by hyperbaton for the more natural ἔστιν ὁ μὲν νοῦς τοιοῦτος. The word τοιοῦτος is predicate and stands for both "passive" with ὁ μὲν and "active" with ὁ δέ [int. νοῦς]: "the one intellect is passive, like matter, in that it becomes all objects, the other intellect is active, like the efficient cause, in that it makes all objects." If τοιοῦτος were attribute and not predicate, ἔστιν must mean "there exists" and the sense must be "passive intellect exists in so far as it becomes all objects, active intellect, in so far as it makes all objects." Those who press this interpretation deny that A. ever really taught the existence of two distinct intellects in the sense in which the art which constructs is distinct from the material which it works upon: they contend that A.'s one intellect is sometimes passive, sometimes active, as it is sometimes θεωρητικός, sometimes πρακτικός.

a 14. τῷ πάντα γίνεσθαι. Argyropylus translates: atque quidam est intellectus talis ut omnia fiat, quidam talis ut omnia agat atque efficiat, qui quidem ut habitus est quidam. With the dative of the infinitive so neatly turned in the Latin cf. 408 b 23 τῷ τὴν ψυχήν τι πεπονθέναι. Zabarella also paraphrases: hic quidem intellectus est talis, i.e. passivus vel habens locum materiae, eo quod potest omnia fieri, alter vero est talis, i.e. activus, eo quod potest omnia facere. Cf. 429 a 18 πάντα νοεῖ, b 5 sq. ὅταν ἕκαστα γένηται. The word πάντα refers strictly to τὰ νοητά, as the simile from light shows. Light makes potential

colours actual colours, νοῦς makes potential νοητὰ actual νοητά. For πάντα A. substitutes τὰ ὄντα 429 a 24 (as compared with 429 b 30) and again 431 b 21 sqq. The term ὄντα must include material as well as immaterial things. Cf. 430 a 3 ἐπὶ μὲν γὰρ τῶν ἄνευ ὕλης, a 6 ἐν δὲ τοῖς ἔχουσιν ὕλην. It was a dictum of Averroes that A. posited the active intellect because he did not accept the Platonic universals as existing outside the soul. Commenting on this dictum, Zabarella shows that it requires correction, for universals outside the mind, however much they might be actually intelligible in themselves, would not be so in respect of our intellect. In themselves they are actually intelligible and need no intellect to make them so, but not as they are presented to our intellect, for they are presented shrouded in the phantasmata of their effects and of material things: cf. 432 a 4 ἐν τοῖς εἴδεσι τοῖς αἰσθητοῖς τὰ νοητά ἐστι. This is because our intellect is a form, *quâ* homo est homo, and because cognition comes by abstraction, for nothing can be offered to the mind for cognition unless it pass through sense and imagination. Hence the active intellect is necessary even for knowing immaterial things. If we could cognise them ἄνευ φαντασμάτων, we should certainly cognise them without its aid: intellect in that case would not be two-sided. But such a mode of cognition is peculiar to intelligences higher than man (such as move the heavenly bodies, 434 b 4—7). Our potential intellect, however, receives everything from the imagination and therefore it is said to become all objects, whether material or immaterial, by cognition, which is merely through abstraction.

a 15. ὡς ἕξις τις. The term ἕξις is brought in to explain πάντα ποιεῖν, correcting or supplementing the comparison with τέχνη, which was used, a 12 sq., to illustrate the efficient cause throughout nature. In various passages ἕξις is practically a synonym of εἶδος (see Bonitz ad *Metaph.* 1070 a 11, who cites *ib.* 1044 b 32 τοῦ μὲν καθ' ἕξιν καὶ κατὰ τὸ εἶδος ὕλη), just as εἶδος is sometimes used (*ib.* 1069 b 34, 1070 b 11) instead of ἕξις for the positive counterpart of στέρησις. This interchange of meaning arises from the fact that both εἶδος in its distinctive sense of "form" and ἕξις in its distinctive sense of "positive quality" or "permanent disposition" are opposed to στέρησις. Cf. 417 b 16 ἐπὶ τὰς ἕξεις καὶ τὴν φύσιν in contradistinction to b 15 ἐπὶ τὰς στερητικὰς διαθέσεις. There is, however, a difficulty, for νοῦς which is ἐν ἕξει, as described 429 b 5—9, is still δυνάμει πως. That which is always actual and never potential can only be described as a ἕξις by a stretch of the term. Hence τίς: cf. *De Gen. et Corr.* I. 7, 324 b 17 τὰ δ' εἴδη καὶ τὰ τέλη ἕξεις τινές, ἡ δὲ ὕλη ᾗ ὕλη παθητικόν. But in 418 b 19 light is by implication ἕξις, while 418 b 9 it is ἐνέργεια. In *Anal. Post.* II., c. 19 all modes of cognition, sense, knowledge and intellect, are described as ἕξεις and in *Eth. Nic.* VI., e.g. 1139 b 31, the various intellectual faculties are defined as ἕξεις. It is not, however, certain that our text is precisely what the commentators had before them. For Alex. Aphr. cf. *De An.* 88, 23 εἶναί τινα δεῖ καὶ ποιητικὸν νοῦν, ὅς **αἴτιος τῆς ἕξεως** τῆς τοῦ ὑλικοῦ νοῦ γίνεται: where, however, Alex. may have substituted αἴτιος τῆς ἕξεως for ἕξις τις on his own authority, tacitly correcting A.

a 15. οἷον τὸ φῶς. Cf. 418 b 18, "darkness is the absence from the transparent of the positive quality (ἕξις) above described, so that plainly light is the presence of this quality." The comparison must have been suggested by the well-known passage in *Republic* VI. 508 A sqq., where Plato compares the idea of the good as the cause of being and of knowledge to the sun.

a 16. ποιεῖ τὰ δυνάμει ὄντα χρώματα ἐνεργείᾳ χρώματα. Cf. Alex. Aphr. *De An. Mantissa*, 107, 31 ὡς γὰρ τὸ φῶς αἴτιον γίνεται τοῖς χρώμασιν τοῦ δυνάμει οὖσιν ὁρατοῖς ἐνεργείᾳ γίνεσθαι τοιούτοις, οὕτως καὶ οὗτος ὁ τρίτος νοῦς τὸν δυνάμει

καὶ ὑλικὸν νοῦν ἐνεργείᾳ νοῦν ποιεῖ ἕξιν ἐμποιῶν αὐτῷ τὴν νοητικήν. When it is dark, the colours exist in external things potentially, when it is light they exist in them actually. It is light which causes the transition from potentiality to actuality. So, too, a cause is needed to transform δυνάμει νοητὰ into ἐνεργείᾳ νοητά, and this has now been provided. The introduction of ἕξις τις seems due to the comparison with light.

a 17 καὶ οὗτος ὁ νοῦς...18 ἀμιγής. As Zeller remarks (*Aristotle*, II. p. 121, *n.* 3, Eng. Tr.) χωριστὸς means here not merely "separable," but "actually separate," i.e. "not involved in physical life," and is best explained by *De Gen. An.* II. 3, 736 b 28 οὐθὲν γὰρ αὐτοῦ (int. τοῦ νοῦ) τῇ ἐνεργείᾳ κοινωνεῖ σωματικὴ ἐνέργεια. The three predicates χωριστός, ἀπαθής, ἀμιγὴς were applied to νοῦς in III., c. 4 before any mention had been made of the distinction between active and passive intellect. Here these predicates are claimed for the active intellect, and the clause ἀεὶ γὰρ τιμιώτερον κτέ. certainly suggests that the intellect to which they were ascribed in c. 4 is the passive intellect, and that *a fortiori* they belong to the active intellect which, as cause and activity, stands higher in the scale of logical priority. It has been objected that καὶ οὗτος δὲ ὁ νοῦς is required if the sense is "this active intellect also" (as well as the passive intellect). But A. may be allowed to say that the attributes in question belong to this intellect without adding either "as well as to the other" or again "and not to the other."

a 18. τῇ οὐσίᾳ ὢν ἐνέργεια. By ἐνέργεια must be understood actual thinking, which is νοῦ ἐνέργεια: cf. 407 a 20. It is of its very essence to be activity, potentiality is altogether excluded. This characteristic is distinctive of the active, as compared with the receptive, intellect. The former is, in Zabarella's words, "substantia vere separata per essentiam a materia," for to such substances alone does it belong that they are identical with their own activity and that they are so of their own essence and not through something else. Nothing material is in its essence its own activity or operation. The passive intellect can also be said to be identical with its own operation, but it is not ἐνέργεια "secundum suam substantiam," but because it was brought to this perfection and made such by another, its own essence being pure potentiality in relation to all intelligibles. Cf. *Metaph.* 1071 b 17 ἔτι οὐδ' εἰ ἐνεργήσει, ἡ δ' οὐσία αὐτῆς δύναμις· οὐ γὰρ ἔσται κίνησις ἀΐδιος· ἐνδέχεται γὰρ τὸ δυνάμει ὂν μὴ εἶναι. δεῖ ἄρα εἶναι ἀρχὴν τοιαύτην ἧς ἡ οὐσία ἐνέργεια, 1074 b 18 εἴτε νοεῖ, τούτου δ' ἄλλο κύριον (οὐ γάρ ἐστι τοῦτο ὅ ἐστιν αὐτοῦ ἡ οὐσία νόησις, ἀλλὰ δύναμις), οὐκ ἂν ἡ ἀρίστη οὐσία εἴη· διὰ γὰρ τοῦ νοεῖν τὸ τίμιον αὐτῷ ὑπάρχει, 1072 b 26 ἡ γὰρ νοῦ ἐνέργεια ζωή, ἐκεῖνος δὲ ἡ ἐνέργεια, said of the deity. I have followed Torstrik, Belger and Biehl in substituting the nominative ἐνέργεια with Simplicius (243, 15, 27, 37) for the dative ἐνεργείᾳ of all the MSS., which most of the commentators read. Heinze, the latest editor of Themistius, has substituted ἐνέργεια (106, 5) for the dative, which the MSS. of Them. give, citing, after Torstrik, 99, 33 H., 183, 28 sq. Sp.; 100, 6 H., 184, 15 Sp. Cf. 100, 10 sq. H., 184, 21 sq. Sp., where Them. appeals to the express testimony of A.'s own words οὕτω γὰρ μόνως ἂν εἴη, καθά φησιν 'Αρ., ταὐτὸν ἥ τε οὐσία αὐτοῦ καὶ ἡ ἐνέργεια. There are plenty of instances of both forms of the expression: e.g. for the nominative *Metaph.* 1072 a 25 ἀΐδιον καὶ οὐσία καὶ ἐνέργεια οὖσα, 1072 b 27 cited above, 1071 b 20, Alex. Aphr. *De An.* 89, 16 ἀπαθὴς δὲ ὢν καὶ μὴ μεμιγμένος ὕλῃ τινὶ καὶ ἄφθαρτός ἐστιν, ἐνέργεια ὢν καὶ εἶδος χωρὶς δυνάμεώς τε καὶ ὕλης: for the dative *Metaph.* 1051 b 28, 1071 b 22, 29, 1072 a 5 sq., b 8, 417 a 29, b 13, 431 a 3 ἐντελεχείᾳ ὄντος.

a 18. τιμιώτερον τὸ ποιοῦν τοῦ πάσχοντος. The possible intellect is its own intellection, yet it is not so in its essence, but it is made such by something else, being in its nature pure potentiality. That which makes it such, viz. the

active intellect, must be in essence such, and must be its own intellection in a higher degree than the possible intellect. This is proved in the present clause, the object of which is to establish, not the three attributes *χωριστός, ἀπαθής, ἀμιγής*, but *τῇ οὐσίᾳ ὢν ἐνέργεια*, from which they are deduced. In *Metaph.* Θ., c. 9 there is a formal proof that, however good may be the power to do something, the actual exercise of that power is higher and better, 1051 a 4 *ὅτι δὲ καὶ βελτίων καὶ τιμιωτέρα τῆς σπουδαίας δυνάμεως ἡ ἐνέργεια, ἐκ τῶνδε δῆλον*: and this holds when the act of thinking is compared with the power to think, *Metaph.* 1072 b 20—24, 1074 b 28—30. Cf. *De Gen. An.* II. 1, 732 a 3 *βελτίονος δὲ καὶ θειοτέρας τὴν φύσιν οὔσης τῆς αἰτίας τῆς κινούσης πρώτης, ᾗ ὁ λόγος ὑπάρχει καὶ τὸ εἶδος τῆς ὕλης, βέλτιον καὶ τὸ κεχωρίσθαι τὸ κρεῖττον τοῦ χείρονος*...a 7 *βέλτιον γὰρ καὶ θειότερον ἡ ἀρχὴ τῆς κινήσεως, ἣ ἄρρεν ὑπάρχει τοῖς γινομένοις· ὕλη δὲ τὸ θῆλυ*, *Pol.* 1333 a 21 *αἰεὶ γὰρ τὸ χεῖρον τοῦ βελτίονός ἐστιν ἕνεκεν*, *Categ.* 12, 14 b 4 *ἔτι παρὰ τὰ εἰρημένα τὸ βέλτιον καὶ τὸ τιμιώτερον πρότερον εἶναι τῇ φύσει δοκεῖ.* *Τίμιον* and *θεῖον* are often used to denote incomparable intrinsic worth: cf. *Metaph.* 1074 b 20 *διὰ γὰρ τοῦ νοεῖν τὸ τίμιον αὐτῷ ὑπάρχει*, *Anal. Post.* I. 31, 88 a 5 *τὸ δὲ καθόλου τίμιον, ὅτι δηλοῖ τὸ αἴτιον*, *De Caelo* I. 2, 269 b 14 *ἔστι τι παρὰ τὰ σώματα τὰ δεῦρο καὶ περὶ ἡμᾶς ἕτερον κεχωρισμένον, τοσούτῳ τιμιωτέραν ἔχον τὴν φύσιν ὅσῳπερ ἀφέστηκε τῶν ἐνταῦθα πλεῖον*, *De Mot. An.* 6, 700 b 34. Cf. the sense of *πρότερον* in, e.g., *Phys.* VIII. 9, 265 a 22 *πρότερον δὲ καὶ φύσει καὶ λόγῳ καὶ χρόνῳ τὸ τέλειον μὲν τοῦ ἀτελοῦς, τοῦ φθαρτοῦ δὲ τὸ ἄφθαρτον.* The logical priority of *τὸ ποιοῦν* over *τὸ πάσχον*, which is here implied, is affirmed for *τὸ κινοῦν* as compared with *τὸ κινούμενον* in *Metaph.* 1010 b 37 sq., while, according to 1049 b 27, *τὸ δὲ κινοῦν ἐνεργείᾳ ἤδη ἐστίν*: and herein lies the reason why A. postulates an *ἀρχὴ* which is always *ἐνέργεια*, never *δύναμις*, nor even *ἐνεργοῦν τι οὗ ἡ οὐσία δύναμις*, *Metaph.* 1071 b 14—20, 1074 b 18—21, alike for motion and for thought. Cf. 1075 b 30—34, *De Part. An.* I. 1, 640 a 24 *τὸ ποιῆσαν πρότερον ὑπῆρχεν οὐ μόνον τῷ λόγῳ ἀλλὰ καὶ τῷ χρόνῳ.* This language, attributing superiority or logical priority to the cause over matter, is of Platonic origin: cf. *Phaedo* 80 A, *Philebus* 26 E, 27 A *τὸ δουλεῦον εἰς γένεσιν αἰτίᾳ*, 28 C, 30 A, 53 D *τὸ μὲν σεμνότατον ἀεὶ πεφυκός, τὸ δ' ἐλλιπὲς ἐκείνου* sqq., *Timaeus* 34 B, C.

a 19. ἡ ἀρχή. To suit a 12 *supra*, *τὸ αἴτιον καὶ ποιητικόν*, the term must be taken in a restricted sense as efficient or final cause: cf. *Metaph.* 1025 b 22 *τῶν μὲν γὰρ ποιητικῶν ἐν τῷ ποιοῦντι ἡ ἀρχή, ἢ νοῦς ἢ τέχνη.*

a 19. τὸ δ' αὐτό. This remark is repeated 431 a 1—3. The doctrine has been implied in 429 b 9, b 27 sq., 430 a 2 sqq. Knowledge is a function of the intellect which becomes all objects: cf. *Metaph.* 1074 b 38 sqq., as cited in *note* on 430 a 4. The bearing of this sentence upon what precedes is made clearer by a comparison with *Metaph.* Λ., c. 9. In that chapter two difficulties are raised about the divine mind: (1) if its thinking has an external object, its essence will be not thinking, but the power to think, and it will not be itself the highest and best; (2) what, then, does it think? A. first refutes the assumption that the essence of the divine mind is not actual thinking, but the mere power to think. The object of its thought must be the highest and most divine and must be immutable. Nothing satisfies these conditions but itself. Hence the conclusion: 1074 b 33 *αὑτὸν ἄρα νοεῖ, εἴπερ ἐστὶ τὸ κράτιστον*: it is *νόησις νοήσεως.* This corresponds to the stage reached in our own chapter at 430 a 18 *τῇ οὐσίᾳ ὢν ἐνέργεια*, for *νοῦ ἐνέργεια = νόησις.* To this it may be objected that knowledge and other products of thought have objects other than themselves; and this objection is met, precisely as in the present chapter, by the statement that theoretical knowledge is identical with its object, 1074 b 38—1075 a 5.

a 20. τῷ πράγματι, "the thing known," *τῷ ἐπιστητῷ*: cf. *Metaph.* 1074 b 38

ἢ ἐπ' ἐνίων ἡ ἐπιστήμη τὸ πρᾶγμα. See *notes* on 429 b 21, 430 a 3. **ἡ δὲ κατὰ δύναμιν**, int. ἐπιστήμη. Identity with the thing known is verified for actual knowledge, but not for potential knowledge, which is in point of time prior to actual knowledge in the individual and is distinct both from actual knowledge and from the thing known.

a 21. χρόνῳ προτέρα ἐν τῷ ἑνί, int. ἐστι τῆς κατ' ἐνέργειαν ἐπιστήμης. As potential knowledge does not precede actual knowledge in other respects, so neither does it precede it in time, since before X actually knows something, someone else knew it. Potentiality may precede actuality in one individual, but this potentiality was preceded by actuality in someone else. The temporal priority of ἐνέργεια over δύναμις generally from this point of view is established *Metaph.* 1049 b 17 sqq. The words ἐν τῷ ἑνί = in one and the same particular man: cf. 412 a 26 ἐπὶ τοῦ αὐτοῦ. If we take the individual, he has a power of thinking and knowing before he actually thinks and knows. Cf. 417 a 21 sqq., especially 417 b 17—19, where the faculty of sense is declared analogous to the ἕξις of ἐπιστήμη. For geometry, the typical science, the case is well put *Metaph.* 1051 a 21—33. How do we learn or discover the truths of geometry? A.'s reply is (a 21) εὑρίσκεται δὲ καὶ τὰ διαγράμματα ἐνεργείᾳ, and, after illustrating this by one or two examples, he concludes: a 29 ὥστε φανερὸν ὅτι τὰ δυνάμει ὄντα εἰς ἐνέργειαν ἀναγόμενα εὑρίσκεται. αἴτιον δ' ὅτι νόησις ἡ ἐνέργεια. ὥστ' ἐξ ἐνεργείας ἡ δύναμις· καὶ διὰ τοῦτο ποιοῦντες γιγνώσκουσιν· ὕστερον γὰρ γενέσει ἡ ἐνέργεια ἡ κατ' ἀριθμόν. The potential properties of the figure are thus discovered by being transformed to actualities; the reason is that the actuality of these mathematical objects is the thinking them. Hence here also the potentiality is preceded by actuality, and we get knowledge by the active exercise of thought, for it is only in each individual person that the actuality, the exercise of power, is later to arise. I take ἡ ἐνέργεια ἡ κατ' ἀριθμὸν to mean the same as ἡ κατ' ἐνέργειαν ἐπιστήμη ἡ ἐν τῷ ἑνὶ of our text.

a 21. ὅλως δέ, simpliciter loquendo et non sumendo aliquem singularem hominem (Zabarella). This stands in contrast with ἐν τῷ ἑνί, "in the individual." We might therefore expect that ὅλως would mean ἐν τῷ ὅλῳ, "in the universe at large," as seems to be the case, e.g., *Phys.* VIII. 6, 259 b 3 ταῦτα δὴ καὶ δόξαν παρεῖχε μή ποτ' ἐνδέχεται κίνησιν ἐγγίνεσθαι μὴ οὖσαν ὅλως (at all), διὰ τὸ ἐν τούτοις ὁρᾶν ἡμᾶς τοῦτο συμβαῖνον. And so (in part) Philop. and Zeller: Philoponus' words are: 557, 28 ὁλικῶς καὶ ἁπλῶς εἰπεῖν ἐν ὅλῳ τῷ κόσμῳ οὐκ ἔστι πρότερον τὸ δυνάμει τοῦ ἐνεργείᾳ, διότι πάντα ἐξ ἐντελεχείᾳ τινὸς ὄντος προάγεται εἰς ἐνέργειαν διὰ τοῦ δυναμένου προάγειν. Themistius, however, 99, 31 H., 183, 26 Sp., substitutes ἁπλῶς, which, as we learn from Philop. 557, 27, was actually a variant for ὅλως. Bonitz has remarked that in certain passages the meaning of ἁπλῶς is much the same as that of ὅλως, καθ' ὅλου: quoniam si qua notio simpliciter praedicatur, nihil est additum quod eam distinctius definiat et in angustiorem ambitum cogat (*Comm. in Metaph.*, p. 414, ad 1052 a 19). Cf. *Metaph.* 1039 b 21 ἡ μὲν οὕτως ἐστὶν οὐσία σὺν τῇ ὕλῃ συνειλημμένος ὁ λόγος, ἡ δὲ ὁ λόγος ὅλως, 1033 b 11 τοῦ δὲ σφαῖραν εἶναι ὅλως εἰ ἔστι γένεσις, ἔκ τινός τι ἔσται, 1033 b 26 sqq.

a 21. οὐ χρόνῳ, int. προτέρα ἐστίν. In the order of thought or being, potential knowledge is not prior to actual. If in the individual man it comes first in the order of development, it does not follow that even this temporal priority belongs to it ὅλως, whether we interpret this word by "absolutely" or "in the whole universe." In *Metaph.* 1049 b 17—1050 a 3, where the temporal priority, from one point of view, of ἐνέργεια over δύναμις is established, the treatment suggests that ὅλως means "if we consider the whole species." There is an active intellect whose energy is not preceded by a state of mere potentiality.

To the divine mind, described *Metaph.* Λ., c. 7 sqq., this antithesis does not apply. All potentiality is there excluded. The energy of this divine mind is not associated with a νοῦς παθητικός, much less with a body: in Aristotelian phrase, ἐνεργεῖ, ἀλλ' οὐ κινεῖται οὐδὲ πάσχει.

a 22. ἀλλ'. A. has been remarking, about the intellect that becomes all objects, that its knowledge is not always in it actually, but first potentially and afterwards actually (and hence it does not always think, 430 a 5). Then he goes on: "But this is not the case with the active intellect, it has not first potential knowledge and afterwards actual knowledge, so that it sometimes thinks and sometimes does not think: it is always actually thinking," sua essentia est sua operatio.

a 22. οὐχ ὁτὲ μὲν νοεῖ, int. οὗτος ὁ νοῦς. So Alex. Aphr., *De An. Mantissa* 109, 27 sq., 112, 11 (cf. 112, 23—113, 2), Them. 99, 34—36 H., 184, 1—3 Sp. We could hardly supply ὁ νοῶν here, because of the next sentence. Some commentators, who take divergent views, are obviously influenced by dogmatic considerations. Thus Averroes made the potential intellect the subject and Aquinas the speculative intellect, in which active and passive are combined. Both held the immortality of the whole intellect. The effect of the prefixed negative extends over the whole sentence: ὁτὲ μὲν νοεῖ ὁτὲ δ' οὐ νοεῖ = οὐκ ἀεὶ νοεῖ and describes intermittent thought, the experience of individual men, who sometimes think and sometimes do not think. This, then, is denied of the active intellect and by implication it is affirmed that it thinks unintermittently and perpetually, in marked contrast to the promised enquiry 430 a 5 τοῦ δὲ μὴ ἀεὶ νοεῖν τὸ αἴτιον ἐπισκεπτέον, where the subject νοῦς, as so far depicted, must be the potential intellect which, as above explained, by acquiring knowledge developes into a habit (ἕξις). There is no need, however, to cut the knot and with Simplicius in ancient, and Torstrik in modern times, omit οὐχ, as did the scribes of two inferior MSS. When Torst. argues that the text of *De A.* has been tampered with on doctrinal grounds, the probabilities in each case must be carefully weighed. Torst. himself ascribes the insertion of οὐχ to Platonising influences: but if the text were altered by the School (which has yet to be proved), it is at least as probable that their first anxiety would be to make Aristotle's utterances as far as possible consistent, or at any rate to avoid introducing such an apparent and glaring contradiction as that between μὴ ἀεὶ νοεῖν and οὐχ ὁτὲ μὲν κτέ.

a 22. χωρισθεὶς, "when separated." The masculine participle goes back to οὗτος ὁ νοῦς, active intellect. According to 429 a 11, χωρισθεὶς should mean primarily "when separated from the other faculties of soul." Thus the nutritive faculty is found separated from the rest in plants, 415 a 2 sq. But while, according to 414 b 29—415 a 10, the general rule is that the higher faculties imply the presence of the lower, the case of θεωρητικὸς νοῦς is peculiar. As a matter of fact, it is found apart from the rest, not only in the deity, but also in the spirits of the spheres. But we must not overlook the all-important distinction that the deity and these spirits are, unlike man, wholly immaterial essences: cf. *Metaph.* 1073 a 3—13, a 34—1073 b 1. In the plainest terms A. denies of them μέγεθος, 1073 a 5 μέγεθος οὐδὲν ἔχειν ἐνδέχεται, a 38 ἄνευ μεγέθους, whereas it is still a problem 431 b 17—19 whether human intellect ever is κεχωρισμένον μεγέθους. It has been maintained that in the case of man "separated from the other faculties of soul" comes to much the same thing as "when separated from the body," viz. before birth or after death. But, it may be asked, is this transcendental interpretation necessary? Others would explain χωρισθεὶς as "separated by abstraction." No one would ever think twice before

thus interpreting the aorist of the active verb, as in *Metaph.* 1016 b 2, 1036 b 7, 1078 b 31, 1086 b 4, 5: cf. 1036 b 3 ἀφελεῖν τῇ διανοίᾳ. This view was clearly stated by Zabarella. To begin with, he contends, the participle must mean a separation which took place in past time. Hence χωρισθεὶς is not applicable to God or the whole genus of abstract substances, the intelligences which move the stars: such substances have always been without matter, as they now are. Thus χωριστός, which can, and often does, mean "both separable and actually separate" is the appropriate term for them: or κεχωρισμένος, which is used with ὢν like an adjective 431 b 18 sq. Again, if we mean by χωρισθεὶς a real separation from matter, the term does not suit the active intellect, for it would imply that the latter was first implicate in matter and that afterwards it was separated from matter: cf. *Metaph.* 989 b 4 τῶν γὰρ αὐτῶν μῖξίς ἐστι καὶ χωρισμὸς and 989 b 1 ἄμικτα δεῖν προϋπάρχειν. If, then, it is not a real separation which is intended, it must be merely a mental separation. Hence A.'s meaning is that, if we mentally separate it from the relation it has to the passive intellect, which in the individual becomes all objects, and if we consider it in itself and no longer as active, it is its true self alone, τοῦθ' ὅπερ ἐστί, because it is pure quiddity and there is no distinction between the quiddity and that which has the quiddity. In case our curiosity is not satisfied and we want to know what it is out of relation to the passive intellect and to man, A. lightly touches upon what it is in itself, though well aware that this question belongs to the domain of metaphysics. He puts us off for the present with τῇ οὐσίᾳ ὢν ἐνέργεια and τοῦθ' ὅπερ ἐστί. Cf. 431 b 18 μὴ κεχωρισμένον μεγέθους. Plato by the simile of the sea-god Glaucus, *Rep.* 611 A—612 A, intimates his belief that the essential nature of soul is not to be confounded with its manifestations within our experience.

a 22. μόνον. It is not quite clear whether this word goes with χωρισθεὶς or with τοῦθ' ὅπερ ἐστί, "it is only when separated that it is what it is" or "when separated, it is what it is and nothing else." From the word μόνον it has been inferred that the condition of companionship with other psychical faculties incident to the life of the individual in some measure hampers or obscures the energy of thought.

a 23. τοῦτο μόνον, int. τῶν ἐν ἡμῖν. Cf. *Eth. Nic.* 1177 a 15 εἴτε θεῖον ὂν καὶ αὐτὸ εἴτε τῶν ἐν ἡμῖν τὸ θειότατον, b 28 ᾗ θεῖόν τι ἐν αὐτῷ ὑπάρχει, b 34 τὸ κράτιστον τῶν ἐν αὐτῷ, *Metaph.* 1074 b 15 δοκεῖ μὲν γὰρ εἶναι [int. ὁ νοῦς] τῶν φαινομένων θειότατον. The neuter pronoun is influenced by τοῦθ' ὅπερ ἐστὶ just before. It is best to interpret τοῦτο here in conformity with τοῦτο in the next line (and, in my opinion, ἄνευ τούτου in a 25), i.e. to refer all three to active intellect, or, more precisely, to the real nature or quiddity of active intellect, τοῦθ' ὅπερ ἐστί.

a 23. ἀθάνατον καὶ ἀΐδιον. Some, e.g. Zeller (*Aristotle* II. p. 104, *n.* 2, Eng. Tr.), hold that eternity is involved in the attribute χωριστός. Cf. 408 b 25 *note.* The passage of primary importance besides 408 b 18 sqq., viz. *Metaph.* 1070 a 24, is cited in a *note* on 408 b 19, p. 277. Here we have a clear statement that there is nothing immortal in the human soul except the active intellect. A. grants that there is an immortal element and tells us what it is. Of the two terms ἀΐδιον is wider: ἀθάνατον applies strictly only to living beings, death being the privation of life. Cf. Plato, *Rep.* 611 A ἀνάγκη αὐτὸ ἀεὶ ὂν εἶναι, εἰ δ' ἀεὶ ὄν, ἀθάνατον. The terms are probably not differentiated here, the use of both is for greater emphasis. The attempts to differentiate them are not successful. See Philop. 537, 1—8, 541, 6—10, who maintains that the other faculties of soul are immortal, but only intellect is eternal. Others say that ἀθάνατον refers to future immortality, ἀΐδιον to past eternity; or that the active intellect is ἀθάνατον *quâ*

intellect and life, eternal *quâ* substance. Aquinas, understanding the predicates of the whole intellective soul, makes A. declare it ἀΐδιον merely *a parte post*, which, as Zabarella remarks, however true from the Christian standpoint, would not have appeared so to A. He would never have admitted that anything could be eternal *a parte post* which was not also eternal *a parte ante*. Cf. Theophrastus apud Them. 108, 26 H., 200, 6 Sp. ἔοικε δ' οὖν ὡς ἀγένητος, εἴπερ καὶ ἄφθαρτος.

a 23. **οὐ μνημονεύομεν**, "we" as individual human beings, who began to be at birth and cease to be at death. In 408 b 27 sq. the individual is said not to remember when the body is destroyed. But here no such condition is attached, and it is arbitrary to force the same meaning out of the two passages. The clause seems to answer, not the preceding sentence, but the previous assertion, a 22, of perpetual, unbroken thinking, "though it is always thinking, yet we do not remember": and this, too, when we do remember many of our former thoughts and can often recall at will what we learned or knew, *De Mem.* 1, 449 b 18—22 *et saepe*. The reference to 430 a 22 suggests that the object of memory which A. omits to state is the eternal thought of the active intellect. But will this explanation suit the reason assigned? An activity of perpetual thinking is certainly impassive in a different way from a δύναμις. The latter, however often objects are presented to it, never fails to respond by receiving them and thus passing from potence into act. The former, being always in act, never once does this. For memory two things are requisite, (1) affection, πάθος, and (2) time. So far as the active intellect is concerned, there is no affection in the composite substance of the individual, nothing μνημονευτόν, because nothing φανταστόν. It is true that A. sometimes speaks as if the particular man could on rare occasions become directly conscious, as we should now say, of the eternal life of the divine element within him, *Metaph.* 1072 b 13—30, from which I cite b 14 διαγωγὴ δ' ἐστὶν οἵα ἡ ἀρίστη μικρὸν χρόνον ἡμῖν. οὕτως γὰρ αἰεὶ ἐκεῖνο (ἡμῖν μὲν γὰρ ἀδύνατον) and b 24 εἰ οὖν οὕτως εὖ ἔχει, ὡς ἡμεῖς ποτέ, ὁ θεὸς αἰεί, θαυμαστόν· εἰ δὲ μᾶλλον, ἔτι θαυμασιώτερον. ἔχει δὲ ὧδε, 1075 a 5—10, especially a 7 ὥσπερ ὁ ἀνθρώπινος νοῦς, ἢ ὅ γε τῶν συνθέτων, ἔχει ἔν τινι χρόνῳ· οὐ γὰρ ἔχει τὸ εὖ ἐν τῳδὶ ἢ ἐν τῳδί, ἀλλ' ἐν ὅλῳ τινὶ τὸ ἄριστον, ὂν ἄλλο τι· οὕτως δ' ἔχει αὐτὴ αὑτῆς ἡ νόησις τὸν ἅπαντα αἰῶνα. The text of this last important citation is not quite certain. Bonitz bracketed ἢ before ὅ γε τῶν συνθέτων and translated "die menschliche Vernunft, obgleich (γε) das Zusammengesetzte ihr Gegenstand ist." See also *Eth. Nic.* 1177 b 26—1178 a 8, 1178 b 18—32, especially b 26 τοῖς δ' ἀνθρώποις, ἐφ' ὅσον ὁμοίωμά τι τῆς τοιαύτης ἐνεργείας ὑπάρχει, and, when he urges us to make ourselves immortal as far as we can, *Eth. Nic.* 1177 b 33, he explains his meaning by adding "and spare no pains to live in the exercise of the highest of our faculties." But this rapture of thought is rare, even for the most highly favoured of men: of them through the greater part of their lives and of the great majority of mankind at all times both the statement that we do not remember and the reason, the impassivity of the active intellect, hold good.

There is another way of explaining the passage psychologically, which was adopted by Plutarch of Athens (apud Philop. 541, 20 sqq.), viz. to understand it as referring to the lapses of memory, the errors, mistakes and forgetfulness which, frequent at all periods of life, grow more frequent in old age. But the reason assigned, viz. the impassivity of intellect, seems quite unsuitable to the effect. Stress must on this view be laid, not on the impassivity of the active, but on the corruptibility of the passive intellect. Moreover, other causes, mainly of a corporeal nature, are assigned by A. himself in his treatise on

memory, *De Mem.* 1, 450 a 30—b 11, 2, 453 a 14—b 7, and nothing is there said of this cause. Again, instead of the general enquiry why we do not remember we should have expected the question why we forget, or rather why we forget this or that particular thing. Cf. *Metaph.* 1047 a 1 ἢ γὰρ λήθῃ ἢ πάθει τινὶ ἢ χρόνῳ· οὐ γὰρ δὴ τοῦ γε πράγματος φθαρέντος, ἀεὶ γάρ ἐστιν. Theophrastus attributed not only forgetfulness, but error (cf. 427 a 29 sqq.) and falsehood to the union in man of the two intellects: *apud* Them. 108, 27 sq. H., 200, 8—10 Sp. It is not, however, certain that the allusion is to our lemma.

Lastly, there is the transcendental view, which most commentators have adopted. It is presented in two forms: (1) Why after death do we not remember our past lives, if the intellect is immortal and survives the death of the man? (2) Why in this present life do we not remember what the intellect knew in previous states of existence, since intellect is eternal and existed before our birth? The advocates of (1) make A. say "Why do we men not remember?" But after death the man has ceased to exist. Besides, it is vain to search for the cause when we are ignorant of the fact or effect. We cannot know now that we do not remember after death, but the words of the text presuppose a known fact. Those who support (1) as against (2) claim that the terms of A.'s solution favour their view, since "perishable" and "impassive" are correct only if the remembrance is assumed to take place in a future life. If the remembrance were in this life of a past incarnation, ἀγένητος, γενητὸς ought to have replaced ἀπαθής, φθαρτός. A. ought to have said "We do not remember our former lives because the active intellect is ἀγένητον, not subject to birth, and the passive intellect is born at the same time as the man, and has had no pre-existence." On the other hand, if it be assumed that A. is alluding to Plato, an assumption which cannot be proved, then this would make in favour of (2), for it was knowledge in this present life which Plato explained by recollection from a past existence. It is also a point in favour of (2) that there is no need to qualify the remembered past by the words "before birth," while, if the reference were to a future life, we should have expected "after death" or something equivalent to τούτου φθειρομένου 408 b 27. Neither view, then, can be stated without presenting grave inconsistencies. Though the second view appears the less inconsistent of the two, in so far as it assigns the memory in question to this life, it is not really more tenable. We cannot remember what we have not experienced and, if individual existence began at birth, so also did individual experience. In this treatise A. takes no account of soul outside the animate body, but always considers it as in the body. See, e.g., 407 b 13—26, 412 b 4—413 a 10, 414 a 4—28, 415 a 25—b 7.

a 24. ὁ δὲ παθητικὸς νοῦς φθαρτός. The expression occurs nowhere else, but the conception is familiar: see, e.g., 429 a 13—18. Φθαρτὸς is not the proper antithesis to ἀπαθές, unless that word be taken to imply "indestructible," ἄφθαρτον. But see *note* on 408 b 25, αὐτὸ δὲ ἀπαθές. As, however, ἀίδιον has just preceded, I think the argument is not fully stated. I should expect it to run thus: ὅτι τοῦτο μὲν ἀπαθές, παθητικὸν δὲ ἄλλο, "but what is capable of suffering is something else, not this." This completes the statement of the reason why we do not remember the thoughts of the eternal intellect. If so, φθαρτὸς is a further step: the intellect which can suffer, which becomes all objects, is not immortal and eternal, but perishable. We may recall the formal proof given *Metaph.* 1050 b 6—18 of the proposition οὐδὲν δυνάμει ἀίδιον: things perishable are just those ὧν ἡ οὐσία ὕλη καὶ δύναμις, 1050 b 27: it was ὁ δυνάμει νοῦς with which A. started in c. 4. Here, however, the greatest care is needed. Intellect is a form, and all forms are uncreated, even if they are not all

separable. The passive intellect belongs to the class of objects which are and are not without becoming or perishing. It is, therefore, only *per accidens* generable or perishable when the particular thing in which it dwells comes to be or is destroyed. Cf. *Metaph.* 1043 b 14—16, 1044 b 21 sqq. In the text no grounds are given for the conclusion *φθαρτός*. We may conjecture as follows. The man cannot think without mental images, which imply sense and imagination, and these powers of the soul are conditioned by the body. The dissolution of the compound substance, the man himself, puts an end to the processes of sensation and imagination, and to the thinking of the man, in so far as mental images are necessary thereto. Again, if the passive intellect perishes, it also had a beginning, its existence in the man is finite, like the existence of the man himself. The single immortal and eternal element in us is obviously not subject to the same conditions.

a 25. καὶ ἄνευ τούτου οὐθὲν νοεῖ. The advocates of the transcendental interpretation of *οὐ μνημονεύομεν* consider that this is part of the reason why memory does not extend from one incarnation to another. Accordingly Simplicius (248, 6) makes *ὁ ἀπαθὴς νοῦς* the subject of *νοεῖ* and *ἄνευ τούτου* = *ἄνευ τοῦ παθητικοῦ νοῦ*. As to the latter point Bonitz agrees, *Ind. Ar.* 491 a 57 sq. Trend. objected that, upon this interpretation, id quod per pronomina licere crederes, tolleretur *ἀπάθεια* et ipsa agentis intellectus libertas in quandam patientis servitutem assereretur. Simplicius foresaw this objection and met it by restricting *νοεῖν* to things which can be remembered: 248, 4 *ὁ δὲ παθητικὸς φθαρτὸς ὡς παθητικός, καὶ ὡς εἰς τὸ μόνιμον συναιρούμενος* [merged in immobility], *ἄνευ δὲ τοῦ παθητικοῦ ὡς παθητικοῦ καὶ προϊόντος μέχρι τῶν σωματοειδῶν ζωῶν οὐδὲν νοεῖ ὁ ἀπαθὴς* **τῶν ὅσα δηλαδὴ μνημονευτά, περὶ ὧν ὁ λόγος·** *ἅπερ, ὡς ἐν ἄλλοις αὐτὸς ἡμᾶς διδάσκει, πάντως ἐστὶ φανταστά. διὸ ἐν τῇ περὶ τῶν μνημονευτῶν νοήσει δεόμεθα πάντως τοῦ μέχρι φαντασίας προϊόντος λόγου, καὶ ἄνευ τούτου οὐδὲ ὁ ἀπαθὴς τῶν μνημονευτῶν τι νοήσει.* Without some such restriction the statement is curiously infelicitous as applied to the eternal something whose essence is activity. Zabarella also makes the active intellect the subject of *νοεῖ* and *ἄνευ τούτου* = without the passive intellect. The active intellect, according to him, is said to think in two ways, (1) secundum se, in which sense, though the active intellect is said to think, the man is not said to think and (2) non formaliter, sed effective, quia efficit in homine intellectionem, et tunc homo dicitur intelligens, non ipse intellectus agens, qui producit in homine intellectionem potius ut intelligibilis quam ut intellectus, sicut sol non est videns, sed efficit in oculo visionem. Thus he distinguishes human thought in the individual, for which the passive intellect is necessary, from the eternal thought of the active intellect, and restricts *νοεῖ* to the former. Zeller (*Aristotle* II., p. 101, *n.* 3, Eng. Tr.) offers two explanations. In one of them, taking the active intellect as the subject of *νοεῖ* and *τούτου* to mean the passive intellect, he restricts *νοεῖ* to the thought of the individual, so that there would be no inconsistency with a 22 *οὐχ ὁτὲ μὲν νοεῖ ὁτὲ δ' οὐ νοεῖ*, which does not apply to the thought of the individual. His second explanation would secure this restriction to the thought of the individual by making *ὁ νοῶν* or *ἡ ψυχή* the subject of *νοεῖ*, i.e. "no thought is possible." In my opinion the Greek naturally suggests the view that *ὁ παθητικὸς νοῦς* is the subject not only of *φθαρτός*, but also of *οὐθὲν νοεῖ*. For, if we suppose that *νοεῖ* is one more instance of the omission of the subject and that *τὸ νοοῦν*, then to be supplied, means the composite substance of the individual thinker, it by no means follows that *ἄνευ τούτου* must mean the passive intellect. If the active intellect had not been required to complete the theory of how thinking comes about (429 a 13), this chapter would never have been written,

for nowhere else is a distinction drawn between two intellects. In order, then, that the individual man may think, it is indispensable to assume both forms of intellect, that which becomes all objects and that which makes all objects (cf. Alex. Aphr. *De An. Mantissa* 112, 20 sq.), and ἄνευ τούτου may be understood of either. If, however, as I believe, φθαρτὸς is opposed, not to ἀπαθές, but to ἀίδιον, and if A. is therefore contrasting the one form of intellect with the other, the attribute of corruptibility would naturally be followed by the assertion of the dependence of the conditioned upon that which conditions it. I may add that, if it were certain that οὐθὲν νοεῖ, like 408 b 28 οὔτε μνημονεύει, were quasi-impersonal, I should certainly advocate a change of punctuation and put a full stop after φθαρτός, the new sentence thus summing up the whole chapter: "and without the active intellect no thinking is possible."

CHAPTER VI.

This chapter treats of various topics, but all are more or less closely connected with the main subject, the apprehension of single or isolated concepts. If we take the first sentence and the last together, we may infer that the main subject of the chapter is intuitive thought and its superiority to discursive thinking, in so far as it deals with the indivisibles, in the apprehension of which falsehood is impossible. Between these two sentences we find (1) a brief discussion of judgment, the process by which the mind puts together single notions and forms a new unity, viz. the judgment expressed in the proposition, whether it do so by combining or by separating. This section ends with the important statement (b 5) that in all such cases it is the intellect which makes the unity. (2) We have a sketch of the way in which three kinds of single notions are thought and known; firstly, the quantitative notions, like length and magnitude, which belong to mathematics; secondly, the infimae species of the physical world and, thirdly, the point. This leads to (3) a casual mention of the possibility of a self-thinking thought. Why these topics are introduced and treated in this order is not stated. A. does not set out to prove that the mind thinks indivisibles, but rather, taking that for granted, dwells on the various ways in which this comes about. He is dealing throughout with units or unities, ἀδιαίρετον being simply a more precise term for the vague and ambiguous ἕν: and the obscurity of some parts of the chapter stands in marked contrast to the clear account of the subject given elsewhere. Now of unity there are various grades, identity, similarity, equality (cf. *Metaph.* 1054 a 29 sqq.): in the fullest sense unity attaches pre-eminently to substances. In general, those things are eminently one of which the thought which thinks the quiddity is indivisible and can effect no separation either in time or in space or in notion, more particularly if they are substances, *Metaph.* 1016 b 1 sqq. Material things, τὸ συνεχές, τὸ ὅλον, are unities of the lowest order, the test being that when such a thing moves, all of it moves together. Then again, the universal, whether genus or infima species, is one, and so is the particular: but these have unity of a higher order, the test of which is that they are thought as one, which is the same thing as saying that the thought which thinks them is one. But these are only instances of the application of the predicate of unity. What is it which constitutes their common nature? A. is careful to deny the proposition, which he ascribes to the Pythagoreans and Plato, that unity is a separately existing entity in the universe, by partaking in which other things become one.

There is no objective *ἕν*, there is only *ἕν τι*, i.e. something which exists as the universal predicate. How, then, can oneness be defined? Not in the ordinary way *per genus et differentiam*, for unity, like Being, is too wide to come under any of the categories, so universal a predicate that it can be applied to all things, adding nothing to their content; just as *ἄνθρωπος = ἄνθρωπος ὤν*, so also *ἄνθρωπος εἷς* is no more than *ἄνθρωπος*, *Metaph.* 1003 b 26 sq. What do we convey by this universal predicate? Just this, that oneness is indivisibleness: *Metaph.* 1052 b 16 *τὸ ἑνὶ εἶναι τὸ ἀδιαιρέτῳ ἐστὶν εἶναι ὅπερ τῷδε ὄντι καὶ ἰδίᾳ χωριστῷ ἢ τόπῳ ἢ εἴδει ἢ διανοίᾳ, ἢ καὶ τὸ ὅλῳ καὶ ἀδιαιρέτῳ, μάλιστα δὲ τὸ μέτρῳ εἶναι πρώτῳ ἑκάστου γένους καὶ κυριώτατα τοῦ ποσοῦ· ἐντεῦθεν γὰρ ἐπὶ τἆλλα ἐλήλυθεν.* Moreover, when we think of a thing as one, we do so without reference to any division into parts of which it may be capable, or any distinction or difference which presents itself when it is compared with another thing, and we think of it moreover as absolutely separate and shut off from everything else. Thus oneness is privation of relation. When a fleet is thought of as one, the differences between the various ships composing it are ignored. We should cease to think of it as one, if we turned our attention to the number of individual ships composing it. There are many different colours and various distinctions between the shades, but all differences and distinctions are ignored when we think of colour as one: and so with triangle, circle, geranium, lion or any other notional unity.

What, then, are the *ἀδιαίρετα* of our text? They are *νοητὰ* and immaterial, without *ὕλη*, 430 b 31. They are simple, for they take their place as elements of more complex *νοητὰ* in the judgment and in other *σύνθετα*. They are not, however, absolutely unanalysable, if quiddities are included (430 b 28), for the definition which has the quiddity for its content, like every *λόγος* (*Metaph.* 1016 a 34 sq., 1034 b 20), consists of parts, and the discursive intellect can separate these parts, e.g. *ζῷον* from *δίπουν* when it analyses the definition of man. Apparently also from 430 b 7—14 it follows that notions of magnitude can be divided and recombined. Rather we may say that, as A. holds about mathematical objects (431 b 15 sq.) that they are not separate from sensibles, but we think them as if they were separate from sensibles, so he holds about forms or quiddities and the notions of length and other magnitudes that they are not always indivisible, but that the mind thinks them as if they were indivisible.

430 a 26—b 6. Where thought is dealing with single, indivisible notions, falsehood or error is impossible. Truth and falsehood are possible only when these irreducible units of thought are put together. As Empedocles supposed the limbs of animals to have been first separately evolved before they united to form animal bodies, so in the realm of thought separate notions are first apprehended and are afterwards united together in a judgment [§ 1]. If thought is dealing with the past or the future, time is an additional element in the combination. False judgment is due to a confusion, as of not-white with white. Or we may use the term disjunction instead of conjunction to describe the relation between concepts in every judgment. Time in any case will affect the truth or falsehood of the judgment. To unite the isolated concepts in a judgment is the work of the intellect [§ 2].

On this passage, the best introduction to which will be found in *Metaph.* Γ., c. 7, E., c. 4, Θ., c. 10, cf. Vahlen, *Aristotelische Aufsätze* I. and Maier, *Syllogistik des Aristoteles* I., pp. 24—35.

430 a 26. **τῶν ἀδιαιρέτων**, i.e. single concepts: *ἀδιαίρετον* = individuum, like *ἕν*, *ἁπλοῦν*, *ἀμερές*, *ἄτομον*. Cf. 430 a 3 *τῶν ἄνευ ὕλης*, *note*. Such unities are, if indivisible, exempt from matter. So long as a *νοητὸν* is *διαιρετόν τι*, logical

analysis can always go on separating, τὸ μὲν τόδε τὸ δὲ τόδε, so much form, so much matter: if no longer sensible matter, then logical or intelligible matter. See *Metaph.* 1033 b 12—19, Z., cc. 10, 11 and 1045 a 33—35. In the words of Bonitz, as long as you can distinguish substance from accidents, you have not reached primary indivisible essence: Iam duo distinguenda sunt rerum genera, compositarum rerum alterum, alterum simplicium. Compositae autem quas dicit non sunt intelligendae eae, quae ex pluribus elementis coaluerunt, sed eae potius, in quibus cum substantia coniungitur accidens aliquod, veluti homo albus, homo sedens, diagonalis irrationalis ac similia (Bonitz ad *Metaph.* Θ., c. 10, p. 409).

a 26. περὶ ἃ. In such cases we either do, or we do not, grasp the object in thought. The function of νοῦς is intuitive. Truth and falsehood are not in the things thought, but in the mind, *Metaph.* 1027 b 25—27. Truth and falsehood are due to an affection of the mind, διανοίας τι πάθος, 1028 a 1. But when we think notions οὐχ ἅμα ἀλλὰ χωρίς, in isolation, when the object of thought is the simple essence or the quiddity, even the mind itself does not introduce truth or falsehood, 1027 b 27 περὶ δὲ τὰ ἁπλᾶ καὶ τὰ τί ἐστιν (the ἀδιαίρετα of our text) οὐδ' ἐν τῇ διανοίᾳ [int. τὸ ψεῦδος καὶ τὸ ἀληθές]. Cf. *Metaph.* 1051 b 17—33. What, A. asks, is "being" and "not-being," as truth and falsehood, with regard to these uncompounded essences, περὶ τὰ ἀσύνθετα? Where the object is compounded, where, as with white wood, incommensurable diagonal, we can distinguish predicate from subject, accident from substance, there "to be" means the conjunction of accident with substance in rerum natura, and truth means the corresponding conjunction of predicate with subject in the mind, while "not-being" and falsehood can be similarly explained as disjunction in rerum natura and in the mind respectively. But in the case we are considering no such analysis is possible. Both "being" and truth must admit of a different explanation. Here truth is simple apprehension, and not to apprehend is ignorance, *Metaph.* 1051 b 23 ἀλλ' ἔστι τὸ μὲν ἀληθὲς θιγεῖν καὶ φάναι...τὸ δ' ἀγνοεῖν μὴ θιγγάνειν. We cannot be deceived, except *per accidens*, about the quiddity or the simple essences, which are always in activity and never potential. Thus when we have to do with essential "being" and actuality, mistake is impossible: we either have or have not the notion, *Metaph.* 1051 b 31 περὶ ταῦτα οὐκ ἔστιν ἀπατηθῆναι ἀλλ' ἢ νοεῖν ἢ μή.

a 27. ἐν οἷς δὲ. Cf. *De Interpr.* 1, 16 a 9, where after a reference to *De A.*, that is, to the present passage, the writer continues ἔστι δ', ὥσπερ ἐν τῇ ψυχῇ ὁτὲ μὲν νόημα ἄνευ τοῦ ἀληθεύειν ἢ ψεύδεσθαι, ὁτὲ δὲ ἤδη ᾧ ἀνάγκη τούτων ὑπάρχειν θάτερον, οὕτω καὶ ἐν τῇ φωνῇ· περὶ γὰρ σύνθεσιν καὶ διαίρεσίν ἐστι τὸ ψεῦδος καὶ τὸ ἀληθές. τὰ μὲν οὖν ὀνόματα αὐτὰ καὶ τὰ ῥήματα ἔοικε τῷ ἄνευ συνθέσεως καὶ διαιρέσεως νοήματι, οἷον τὸ ἄνθρωπος ἢ τὸ λευκόν, ὅταν μὴ προστεθῇ τι· οὔτε γὰρ ψεῦδος οὔτε ἀληθές πω, *Metaph.* 1051 b 1 τὸ δὲ κυριώτατα ὂν ἀληθὲς ἢ ψεῦδος, τοῦτο δ' ἐπὶ τῶν πραγμάτων ἐστὶ τῷ συγκεῖσθαι ἢ διῃρῆσθαι, ὥστ' ἀληθεύει μὲν ὁ τὸ διῃρημένον οἰόμενος διῃρῆσθαι καὶ τὸ συγκείμενον συγκεῖσθαι, ἔψευσται δὲ ὁ ἐναντίως ἔχων ἢ τὰ πράγματα.

a 28. ὥσπερ ἓν ὄντων. This is practically equivalent to ἡνωμένων, "being unified." Them. (109, 8 H., 201, 4 Sp.) observes συντίθησι δὲ οὐχ ὥσπερ σωρόν, ἀλλ' ὥστε ἓν αὖθις τὰ πολλὰ ποιῆσαι καὶ περιαγαγεῖν εἰς μίαν νόησιν τὸ πλῆθος τῶν ἁπλῶν σημαινομένων. New wholes or unities are formed out of the old by the mind. For ἓν indeclinable, when used predicatively, cf. *Metaph.* 1015 b 36, 1016 a 12 sq., a 22, a 25 sq.

a 28 καθάπερ Ἐμπεδοκλῆς...29 ἐβλάστησαν. This line is quoted again by A., with the omission of ᾗ, in *De Caelo* III. 2, 300 b 30 sq. Simplicius in his com-

mentary on the *De Caelo* 587, 1 sq. quotes the two following lines of the poem (Emp. *frag.* 57 D, 232—234 K):

γυμνοὶ δ' ἐπλάζοντο βραχίονες εὔνιδες ὤμων,
ὄμματά τ' οἶ(α) ἐπλανᾶτο πενητεύοντα μετώπων.

This Empedoclean notion of disconnected limbs serves to illustrate isolated concepts and single terms. As the former were joined together to form animal bodies, so the latter can be combined in the unity of the judgment or proposition.

a 30. **ἔπειτα συντίθεσθαι τῇ φιλίᾳ.** This is a summary of Empedocles' lines, *frag.* 20, 2 sq. D, 336 sq. K (cf. Simpl. *in Phys.* 1124, 11 sqq.):

ἄλλοτε μὲν Φιλότητι συνερχόμεν' εἰς ἓν ἅπαντα
γυῖα, τὰ σῶμα λέλογχε, βίου θαλέθοντος ἐν ἀκμῇ.

a 30. **οὕτω καὶ.** Here A. returns from the simile to the psychical fact to be illustrated, restating what he had affirmed above, a 27, in the words σύνθεσίς τις ...a 28 ὥσπερ ἓν ὄντων. Sentences framed on this model: "*A* like *B*: so *A*" are frequent in Plato and Aristotle. Cf. *Pol.* 1286 a 31 ἔτι μᾶλλον ἀδιάφθορον τὸ πολύ, καθάπερ ὕδωρ τὸ πλεῖον, οὕτω καὶ τὸ πλῆθος τῶν ὀλίγων ἀδιαφθορώτερον. See also 423 b 19, *note.*

a 30. **κεχωρισμένα,** i.e. the separate concepts above designated as severally indivisible, individua (ἀδιαίρετα).

a 31. **τὸ ἀσύμμετρον,** "incommensurability," viz. with the side of the square. This is with A. a stock instance: cf. *Metaph.* 983 a 15 ἢ τὴν τῆς διαμέτρου ἀσυμμετρίαν κτέ.

a 31. **ἂν δὲ γενομένων.** On the analogy of the opening words of the chapter Vahlen thus completes the sentence: ἂν δὲ γενομένων ἢ ἐσομένων νόησις ᾖ, τὸν χρόνον προσεννοῶν καὶ συντιθεὶς νοεῖ (Maier, I. p. 25, would add ὁ νοῦς as the subject of νοεῖ: cf. 430 b 6 *infra*).

430 b 1. **τὸ γὰρ ψεῦδος ἐν συνθέσει ἀεί,** int. ἐστι. There can be no question of falsehood until single notions are combined in a judgment, which, when put into words, is a proposition. The mind either affirms or denies whatever it can thus think as something predicated of something else, τὶ κατά τινος, *Metaph.* 1012 a 2 πᾶν τὸ διανοητὸν καὶ νοητὸν ἡ διάνοια ἢ κατάφησιν ἢ ἀπόφησιν. See *note* on a 27, *supra.*

b 2. **ἂν τὸ λευκὸν μὴ λευκόν,** int. λέγῃ or νοῇ. The example illustrates the application of the term σύνθεσις to falsehood. The thing, πρᾶγμα, is λευκόν, white. By confusion of thought it is asserted to be not-white. The man substitutes for "white," which is true, "not-white," which is false. This is the typical case of false judgment and false proposition, and it must continually occur in the region of the contingent, as distinct from the necessary. Some accidents are always conjoined with certain substances, others are sometimes conjoined, sometimes disjoined, ἐνδέχεται τἀναντία: cf. *Metaph.* 1051 b 9 sqq. Mistake is possible, even frequent, because the thing itself is subject to change. Cf. 428 b 1 sqq. Another way of expressing the nature of contingent things is to say that the same proposition respecting them is both true and false, i.e. true of them at one time when the accident is joined with the substance, false at another time when it is not, *Metaph.* 1051 b 13—15. On this view A. takes the simplest case, a positive and not a negative judgment, if "not-white" be a single notion. Even then falsehood involves σύνθεσις, the predicate "not-white" in the proposition is asserted of a subject not mentioned. When Anaxagoras affirmed snow to be not-white, in his judgment he still conjoined "not-white" with snow. In this instance A. has simply substituted λευκὸν for the more general word ὄν, which we find in his description of falsehood in *Metaph.*

1011 b 26 τὸ μὲν γὰρ λέγειν τὸ ὂν μὴ εἶναι ἢ τὸ μὴ ὂν εἶναι ψεῦδος. According to the restoration of the text by Torstrik and Vahlen (see critical *notes*), there are two examples. A. is made to say "For even if we assert white to be not-white or not-white to be white, we make a conjunction." Them. (109, 27—31 H., 202, 2—6 Sp.) and Philop. (548, 9—11) are assumed to have had two examples before them. See Vahlen, *Aufsätze* I., pp. 11 sq. His ingenious restoration is attractive, the chiasmus, as he shows, p. 13, being characteristic of A. But it is hardly necessary. Simpl. (250, 37—39) gives only one example of false judgment.

b 3. συνέθηκεν, int. ὁ λέγων or ὁ νοῶν. With Vahlen's reconstruction συνέθηκεν must be taken absolutely, as συντιθείς, 430 b 1 *supra*. But with the traditional text the verb governs τὸ μὴ λευκόν, "the thinker combines 'not-white,'" i.e. with the white thing. The gnomic aorist with ἂν in the protasis corresponds to the present tenses a 31 συντίθεται, b 4 ἔστι. I admit that negative, as well as affirmative, judgments are described as συνθέσεις *Metaph.* 1027 b 24 λέγω δὲ τὸ ἅμα καὶ τὸ χωρὶς ὥστε μὴ τὸ ἐφεξῆς ἀλλ' ἕν τι γίγνεσθαι, 1012 a 4 ὅταν μὲν ὡδὶ συνθῇ φᾶσα ἢ ἀποφᾶσα, ἀληθεύει, ὅταν δὲ ὡδί, ψεύδεται. But in our passage, I think, A., to avoid unnecessary complication, treats "not-white" as a single notion. If the examples of true judgments do not involve negation (430 a 31 ἀσύμμετρον, not οὐ σύμμετρόν), why should it be necessary in false judgments?

b 3 ἐνδέχεται δὲ...4 πάντα. As Vahlen remarks, *op. cit.*, p. 15, there are two possible ways of taking this sentence. The words may mean (1) all that has been said of σύνθεσις may also be said of διαίρεσις, viz. that it may be false as well as true and that it is both ἁπλῆ and κατὰ χρόνον. All this would be true of διαίρεσις, if the word meant a negative judgment. But, again, the meaning may be (2), we may also give the name διαίρεσις to all which we have called σύνθεσις. Up till now σύνθεσις has stood for positive and negative judgments, ἀπόφασις and κατάφασις: but διαίρεσις may be used with the same extended meaning to include both ἀπόφασις and κατάφασις. Vahlen can cite no authority for διαίρεσις in this extended sense, but thinks the second explanation, which is that of the ancient commentators, to be quite clear from the context. Against (1), which refers the sentence to negative judgments only, it may be urged that it unduly restricts πάντα, takes no account of ἀεὶ b 2 and, as I believe, misunderstands the words ἐὰν τὸ λευκὸν μὴ λευκόν. As already explained, I consider A.'s statements to hold of all judgments, whether positive or negative, true or false, though his examples are confined to positive judgments, first true a 31, then false b 2 sq. The words of the lemma now present another and complementary theory of the judgment. It has been described as σύνθεσις: it might just as well be described as διαίρεσις, for it involves and implies, not only conjunction by the mind, but also separation and analysis by the mind. A. does not state why, but probably it is because, as he explains, e.g. *Phys.* I. 1, 184 a 21—26, what is presented to, and better known by, us is a confused whole, whether sensation, mental image or notion. The data of sense, imagination and thought are as a rule συγκεχυμένα, confused wholes: Socrates walking, a centaur, the notion of man. Analysis is required, whether these data are presented at first as separate or as a confused whole. In the one case it is the mind that puts them together and refers the parts to the whole, the accidents to the substance, before it can form a judgment. In the other case the confused whole is analysed and from τὸ καθόλου we proceed to τὸ καθ' ἕκαστον, *Phys.* I. 1, 184 a 23 διὸ ἐκ τῶν καθόλου εἰς τὰ καθ' ἕκαστα δεῖ προϊέναι. By such disentanglement and resolution into its single elements of the confused presentation of Socrates walking we distinguish the accident from the subject and so form the judgment; and by analysis of the

notion of man we get the judgment "man is a biped animal." Neither *σύνθεσις* nor *διαίρεσις* alone is sufficient to describe the mental process. On the importance of this remark, thus interpreted, both for logic and psychology it is unnecessary to dwell. In every judgment elements are isolated and combined. If Maier's tentative proposal to transpose this sentence were adopted (see critical *notes*) the admission that what has hitherto been called *σύνθεσις* might just as well be called *διαίρεσις* would immediately precede the recognition of *νοῦς* as the unifying principle. But the force of *ἀλλ' οὖν γε* would be weakened. Cf. Vahlen, p. 16 sq.

b 4. **ἀλλ' οὖν...γε,** "but at any rate": cf. Plato, *Crat.* 411 D *ἡ φρόνησις· φορᾶς γάρ ἐστι καὶ ῥοῦ νόησις. εἴη δ' ἂν καὶ ὄνησιν ὑπολαβεῖν φορᾶς· ἀλλ' οὖν περί γε τὸ φέρεσθαί ἐστιν*, *Top.* VI. 13, 150 a 7 *εἰ δὲ μήπω τὸ εἰρημένον σφόδρα ἄτοπον διὰ τὸ καὶ ἐπ' ἄλλων συμβαίνειν τὸ τοιοῦτον...ἀλλ' οὖν τό γε τἀναντία ὑπάρχειν αὐτοῖς παντελῶς ἄτοπον ἂν δόξειεν εἶναι.* **οὐ μόνον.** Torstrik would transpose these words to follow b 4 *ἀληθές*, but for their position in the text, due to hyperbaton, Vahlen cites *Rhet.* I. 4, 1360 a 31, I. 15, 1377 a 3 sq., II. 25, 1402 b 32 sq., *Pol.* 1267 a 16 sq., 1282 a 20 sq.

b 5. **ἀλλὰ καὶ ὅτι ἦν ἢ ἔσται.** Them. (110, 1 H., 202, 17 Sp.) observes *δύο τοίνυν ἴδια ταῦτα τοῦ νοῦ, τό τε πολλὰ δύνασθαι νοήματα εἰς ἓν συνάγειν ὥσπερ ἕν, καὶ τὸ προσεννοεῖν τὸν χρόνον.* Whether we describe the judgment as conjunction or disjunction, if the content of thought belongs to past or future, the temporal relation is necessary to complete it and must be simultaneously thought. **τὸ δὲ ἓν ποιοῦν, τοῦτο ὁ νοῦς ἕκαστον.** The meaning of *ἕκαστον* (see *note* on 424 a 22) is "whether that which unifies does so in this way or in that way," i.e. whether the *σύνθεσις* be rightly or wrongly performed, or, possibly, whether the unification be called conjunction or disjunction. Cf. Vahlen, l.c., p. 17: "das *ἑνοποιεῖν τὰ κεχωρισμένα*, wie es die *σύνθεσις*, richtig oder unrichtig, vollzieht, ist Sache des *νοῦς*," and Wallace: "the process of thus reducing our ideas into the unity of a single judgment is in each case the work of reason" (p. 163). It may be asked whether *ἕκαστον* is accusative governed by *ποιοῦν* or nominative in apposition with it. I incline to the latter view. In either case its place at the end of the sentence is due to the interposition by hyperbaton of *τοῦτο ὁ νοῦς*, and is no more remarkable than the similar position of *ἕκαστον* in 425 b 24. Simplicius takes the former view: 251, 8 *τὴν δὲ λέξιν ὧδε συντακτέον· τὸ ἕκαστον τῶν συμπλεκομένων νοημάτων ἓν ποιοῦν, τοῦτο ὁ νοῦς ἐστι*: cf. Philop. 548, 29 *τὸ δὲ ποιοῦν τούτων ἕκαστον ἓν ὁ νοῦς.* If this were right, Bekker's comma before *τοῦτο* would be of doubtful utility, for it would separate *ποιοῦν* from its object *ἕκαστον*. Vahlen, p. 17, presents the sentence without a comma. The meaning on the view of Simplicius is "that which makes each and every *σύνθετον* one."

430 b 6—20. What is whole and indivisible is either (1) potentially or (2) actually so. When we are dealing with what is quantitative, there is no difficulty in thinking an actually indivisible whole, e.g. a unit of length or a line, or in thinking it in actually indivisible time. Divisibility or indivisibility of time goes with divisibility or indivisibility of units of length. [Here, then, we have a unitary whole. Let us see what can be made, first of the half, and then of the double, of such a unit.] If we suppose the time divided, we cannot say what is thought in each half of the time. The two halves of the line have no actual existence unless the line be actually divided. If, however, we think each of the two halves of the line separately, we simultaneously divide the time also. The one line has then virtually become two lines (*οἱονεὶ μήκη*), and if we think the double, or the one whole line as made up of two halves, the time in which

we think it is also made up of two halves of time [§ 3]. But there is another class of indivisible, viz. the notional, not quantitative, unit. This also we think in an indivisible time and by an indivisible mental act. But the divisibility of the notional unit is to be distinguished from the divisibility of the quantitative unit. The notional unit is also divisible, but its divisibility is incidental. It can be separated into parts, but such divisibility is external and foreign to it and no part of its essence. It is not divisible in so far as the act of thought and the time taken to accomplish it are divisible: when we deal with notional units the act of thought and the time it takes are instantaneous and absolutely indivisible. Herein lies the distinction between the notional unit and the quantitative unit. In the notional units also there is an element of indivisibility, the same which, when we are dealing with quantitative magnitudes, makes units of the time and the length; and this element constitutes the unity of everything which is continuous, as well as of time or length [§ 4].

430 b 6. διχῶς. It is a question whether *λέγεται* or *ἐστὶν* should be supplied. For the former may be cited 417 a 12 *διχῶς ἂν λέγοιτο καὶ ἡ αἴσθησις, ἡ μὲν ὡς δυνάμει, ἡ δὲ ὡς ἐνεργείᾳ*, 426 a 23 *διχῶς γὰρ λεγομένης τῆς αἰσθήσεως καὶ τοῦ αἰσθητοῦ, τῶν μὲν κατὰ δύναμιν τῶν δὲ κατ' ἐνέργειαν* : for the latter 419 b 4 *ἔστι δὲ διττὸς ὁ ψόφος· ὁ μὲν γὰρ ἐνεργείᾳ τις, ὁ δὲ δυνάμει*, 428 a 6 *αἴσθησις μὲν γὰρ ἤτοι δύναμις ἢ ἐνέργεια*, *Phys.* IV. 3, 210 a 26 *διχῶς δὲ τοῦτ' ἐστίν, ἤτοι καθ' αὑτὸ ἢ καθ' ἕτερον*, *De Caelo* III. 1, 299 a 20 *τὰ δὲ πάθη διαιρετὰ πάντα διχῶς· ἢ γὰρ κατ' εἶδος ἢ κατὰ συμβεβηκός*. As there are two sorts of sensation and two sorts of sound, so there are two sorts of indivisible, the one potential, the other actual. For the latter cf. b 8 *infra*, for the former b 11. The indivisible whole, potentially existent, is illustrated by the half of an undivided line which, so long as the mind thinks the whole line as undivided, though it is implicitly present, does not actually exist. Cf. *Metaph.* 1048 a 32 *λέγομεν δὲ δυνάμει οἷον ἐν τῷ ξύλῳ Ἑρμῆν καὶ ἐν τῇ ὅλῃ* [int. *γραμμῇ*] *τὴν ἡμίσειαν, ὅτι ἀφαιρεθείη ἄν*. The statue exists in the wood and the half of the line in the whole potentially, because it is possible for the wood to be carved and the whole line to be divided into two halves, and then the statue and the half line would come into actual existence. Cf. *Phys.* VIII. 8, 263 a 28 *ἐν δὲ τῷ συνεχεῖ ἔστι μὲν ἄπειρα ἡμίση, ἀλλ' οὐκ ἐντελεχείᾳ ἀλλὰ δυνάμει*.

b 6. ἢ δυνάμει ἢ ἐνεργείᾳ. These words, I regret to say, are mistranslated on p. 137. As just explained, the sentence should have run thus: "according as the whole, which is indivisible, is either potential or actual." The Greek commentators supposed these words to mean "either not potentially, or not actually, divisible." So Them. 110, 5 H., 202, 22 Sp. *ἢ γὰρ ὅτι μήτε δυνάμει μήτε ἐνεργείᾳ τοῦτό ἐστι διαιρετόν, ὥσπερ εἶχε τὰ ἄυλα εἴδη καὶ ἡ στιγμή, ἢ ὅτι δυνάμει μὲν διαιρετὸν ἐνεργείᾳ δὲ ἀδιαίρετον, ὥσπερ ἡ γραμμὴ καὶ πᾶν μέγεθος*, Simpl. 251, 14 *τὸ μὲν ὡς τὸ εἶδος οὐδαμῇ ὂν διαιρετὸν οὔτε ἐνεργείᾳ οὔτε δυνάμει, τὸ δὲ ὡς τὸ μῆκος καὶ πᾶν συνεχὲς ἐνεργείᾳ μόνον ὂν ἀδιαίρετον, δυνάμει δέ πως διαιρετόν, ἢ καὶ τῷ ὄντι πεφυκὸς διαιρεῖσθαι*. Philop. 549, 5—7 has a different, but not a better, account. There are very grave objections to the way in which Them. and Simpl. take the words. (1) It does not do justice to *ἢ...ἢ*. Them. says that both of his divisions are *ἐνεργείᾳ ἀδιαίρετον*, for which he substitutes *οὐκ ἐνεργείᾳ διαιρετόν*, the difference being that the second is, what the first is not, *δυνάμει διαιρετόν*. (2) They confuse "potentially indivisible" with "not potentially divisible," and without the strongest evidence it is impossible to believe that A. was guilty of this confusion. Throughout his logic he invariably distinguishes between the two propositions "This is not *B*" and "This is not-*B*." Cf., however, *Metaph.* 1073 a 23 *ἡ μὲν γὰρ ἀρχὴ καὶ τὸ πρῶτον τῶν ὄντων ἀκίνητον καὶ καθ' αὑτὸ καὶ κατὰ συμβεβηκός*, which must mean "has no motion, either proper to it (*καθ' αὑτὸ*) or

accidental (κατὰ συμβεβηκός)," i.e. οὐκ ἔστι κατὰ συμβεβηκὸς κινητόν. (3) According to Them., δυνάμει ἀδιαίρετον has the priority: it is more truly indivisible than ἐνεργείᾳ ἀδιαίρετον. But surely this is contrary to all that we are told by A. of the relationship of δύναμις to ἐνέργεια. (4) Apparently the object of this interpretation is to force the distinction δυνάμει ἀδιαίρετον, ἐνεργείᾳ ἀδιαίρετον into correspondence with τῷ εἴδει ἀδιαίρετον, κατὰ τὸ ποσὸν ἀδιαίρετον below. Themistius' examples of ἐνεργείᾳ ἀδιαίρετον are line and magnitude, which are κατὰ τὸ ποσὸν ἀδ., and those of δυνάμει are ἄυλα εἴδη, immaterial forms, with the addition of points. The fact is that the inconveniences of a negative attribute "indivisible" are very great when what is meant is a positive conception, like "single," "one," "whole." Similar inconvenience attaches to the use of other negative terms, "absolute," "infinite," "unknowable," "unconditioned," when they are used, as they often are, to denote positive conceptions. If an object of thought is in its own nature divisible, so that the act of thinking it may become two acts and the time in which it is thought two times, to apply the term "indivisible" to object, act and time is a severe strain on its meaning.

b 7. **οὐθὲν κωλύει.** This answers to b 6 ἐπεί. It is because the indivisible whole is sometimes potential, sometimes actual, and so subject to becoming, that the mind by thinking the line or whole of length can at the same time bring τὸ ἀδιαίρετον, which is as yet only δυνάμει νοητόν, into actual existence.

b 8. **ἀδιαίρετον γὰρ ἐνεργείᾳ.** Apart from the act of the mind thinking it, τὸ ἀδιαίρετον in the case of a line or any magnitude would never have actual existence, for a line or magnitude is in itself divisible ad infinitum. The mind thinks the whole of length without reference to the parts into which it may be divided. For the mind, which thinks it as such, it is actually indivisible as well as undivided.

b 8. **ἐν χρόνῳ ἀδιαιρέτῳ.** Not only does the mind's act make the length, which is in itself divisible, indivisible at the time it is thought: it also causes the same transformation in time, which is *per se* continuous and divisible. Cf. *De Sensu* 6, 446 a 30 ὁ δὲ χρόνος πᾶς διαιρετός. If the object thought be ἀδιαίρετον, so also must be the time in which it is thought. The act of thinking, which to A. is symbolised not by motion, but by rest or pause (407 a 32 sq.), may take time, but at every instant of such time the act is complete in itself: ἅμα νοεῖ καὶ νενόηκεν. Cf. *Phys.* IV. 10, 218 b 29 εἰ δὴ τὸ μὴ οἴεσθαι εἶναι χρόνον τότε συμβαίνει ἡμῖν, ὅταν μὴ ὁρίζωμεν μηδεμίαν μεταβολήν, ἀλλ' **ἐν ἑνὶ καὶ ἀδιαιρέτῳ** φαίνηται ἡ ψυχὴ μένειν, ὅταν δ' αἰσθώμεθα καὶ ὁρίσωμεν, τότε φαμὲν γεγονέναι χρόνον, φανερὸν ὅτι οὐκ ἔστιν ἄνευ κινήσεως καὶ μεταβολῆς χρόνος, where the protasis expresses the writer's own conviction.

b 9 **ὁμοίως γὰρ...10 μήκει.** Break length or anything continuous, συνεχές, in two, and you think it in two portions of time: keep it whole, and you think it in one. Cf. *Phys.* VI. 2, 233 a 10 φανερὸν ὅτι πᾶς χρόνος ἔσται συνεχής. ἅμα δὲ δῆλον καὶ ὅτι μέγεθος ἅπαν ἐστὶ συνεχές· τὰς αὐτὰς γὰρ καὶ τὰς ἴσας διαιρέσεις ὁ χρόνος διαιρεῖται καὶ τὸ μέγεθος.

b 10. **ἐν τῷ ἡμίσει...ἑκατέρῳ**, int. τοῦ χρόνου.

b 11. **οὐ γάρ ἐστιν**, int. ἑκάτερον τὸ ἥμισυ τοῦ μήκους.

b 11 **χωρὶς δ' ἑκάτερον...13 μήκη.** If we mentally divide the line and think each of the two halves separately, they become in their turn virtually indivisible wholes of length, and the time is similarly divided into what are virtually indivisible wholes of time. **ἅμα** brings out the full force of b 9 sq. *supra.* **οἱονεὶ μήκη**, int. νοεῖ. Whether the line be actually divided or not, it is mentally divided, and the unifying principle, the mind, makes its parts, as it were, new wholes of length.

b 13. **ὡς ἐξ ἀμφοῖν**, int. ὃν τὸ μῆκος νοεῖ ὁ νοῦς. The conception of the unit is more completely brought out if we contrast it first with half, then with double. First the line was thought as undivided whole, then each of its two parts was thought separately; now the mind considers the whole or double as made up of its two parts.

b 14. **ἐπ' ἀμφοῖν**, int. νοεῖ. The force of the preposition seems to be "corresponding to," "in the times which correspond to the two halves of the divided line." The whole time of thinking is regarded as made up of the times in which each half is thought separately.

b 14. **τὸ δὲ μὴ κατὰ ποσὸν...τῷ εἴδει**, int. ἀδιαίρετον. So far we have been dealing with continuous objects, length and time, which *per se* are divisible and only *per accidens* indivisible. We now come to another class of objects of thought, which are *per se* indivisible and only *per accidens* divisible. A clue to the distinction is furnished by *Metaph.* 1016 b 23 πανταχοῦ δὲ τὸ ἓν ἢ τῷ ποσῷ ἢ τῷ εἴδει ἀδιαίρετον, 1053 a 18 οὕτω δὴ πάντων μέτρον τὸ ἕν, ὅτι γνωρίζομεν ἐξ ὧν ἐστὶν ἡ οὐσία διαιροῦντες ἢ **κατὰ τὸ ποσὸν** ἢ **κατὰ τὸ εἶδος**. διὰ τοῦτο τὸ ἓν ἀδιαίρετον, ὅτι τὸ πρῶτον ἑκάστων ἀδιαίρετον. οὐχ ὁμοίως δὲ πᾶν ἀδιαίρετον, οἷον ποὺς καὶ μονάς, ἀλλὰ τὸ μὲν πάντῃ, τὸ δ' εἶναι ἀδιαίρετον πρὸς τὴν αἴσθησιν ἐθέλει, 1053 b 4 τὸ ἑνὶ εἶναι μάλιστά ἐστι...μέτρον τι, καὶ κυριώτατα τοῦ ποσοῦ, εἶτα τοῦ ποιοῦ...ἔσται δὲ τοιοῦτον τὸ μὲν ἐὰν ᾖ ἀδιαίρετον κατὰ τὸ ποσόν, τὸ δ' ἐὰν κατὰ τὸ ποιόν, 1084 b 14 ἀλλ' ἀδιαίρετον καὶ τὸ καθόλου καὶ τὸ ἐπὶ μέρους καὶ τὸ στοιχεῖον, ἀλλὰ τρόπον ἄλλον, τὸ μὲν κατὰ λόγον τὸ δὲ κατὰ χρόνον (cf. Pseudo-Alex. *ad loc.* 774, 3—15 H.), 1052 a 31 ἀριθμῷ μὲν οὖν τὸ καθ' ἕκαστον ἀδιαίρετον, εἴδει δὲ τὸ τῷ γνωστῷ καὶ τῇ ἐπιστήμῃ, 999 a 1—6. Of the latter I cite a 2 ἀδιαίρετον δὲ ἅπαν ἢ κατὰ τὸ ποσὸν ἢ κατὰ τὸ εἶδος, πρότερον δὲ τὸ κατ' εἶδος. As Bonitz in his commentary *ad loc.* observes, the distinction between the two kinds of ἀδιαίρετον under consideration must not be confused with that between numerical unity, ἓν τῷ ἀριθμῷ, and specific unity, ἓν τῷ εἴδει. Two or more things which fall under the same species are said to be ἓν τῷ εἴδει, i.e. specifically identical, but the term ἓν κατὰ τὸ εἶδος is applied to an infima species, which cannot itself be further subdivided. And this is why logical priority is differently defined in the one case and in the other. For numerical unity, ἓν τῷ ἀριθμῷ, denotes a more perfect unity than ἓν τῷ εἴδει, the former comprehends the latter and all other kinds of unity (ἓν τῷ εἴδει, τῷ γένει, τῷ κατ' ἀναλογίαν). But in the distinction we are investigating between ἀδιαίρετον τῷ εἴδει or κατὰ τὸ εἶδος and ἀδιαίρετον κατὰ τὸ ποσόν, logical priority attaches to ἓν κατὰ τὸ εἶδος, because εἶδος is the constitutive form which makes the thing what it is, while ποσὸν is more nearly akin to matter: in fact, τὸ συνεχὲς is logical or intelligible matter. Hitherto we have been dealing with wholes indivisible κατὰ τὸ ποσόν. We are now introduced to the infimae species: ἓν κατὰ τὸ εἶδος ea est species, quae non ipsa iterum in species dividitur (Bonitz, ad *Metaph.* 999 a 1—6). The members of such a species are united by the single notion or definition which comprehends them all, *Metaph.* 1016 b 33 εἴδει δ' [int. ἓν] ὧν ὁ λόγος εἷς. The infima species may be divided into its members, but not as a genus is divided into species, *ib.* 999 a 5 οὐ γάρ ἐστι γένος ὁ ἄνθρωπος τῶν τινῶν ἀνθρώπων. As we shall see, A. calls the division of an infima species a division *per accidens.* Any species incapable of further division into subspecies would answer to the description of the text, "a whole not quantitatively indivisible" (and therefore not συνεχές τι, a continuous whole of magnitude), "but specifically indivisible." Cf. also *Metaph.* 1087 b 33 sqq.: "Plainly the One signifies a measure and in each class of things the One which is measure is predicated of a different subject. In music the unit is a quarter tone, in length or magnitude a finger's-breadth or a foot or

some similar unit, in rhythm a beat or a syllable, and similarly in weight some definite standard of weight. And so generally of whatever the unit is predicated; in things which have quality the unit is something which has quality, in quanta the unit is a quantum, and the unit-measure is indivisible, in the first case specifically, in the latter as presented to sense, 1087 a 37 *καὶ κατὰ πάντων δὲ τὸν αὐτὸν τρόπον, ἐν μὲν τοῖς ποιοῖς ποιόν τι, ἐν δὲ τοῖς ποσοῖς ποσόν τι* (*καὶ ἀδιαίρετον τὸ μέτρον, τὸ μὲν κατὰ τὸ εἶδος τὸ δὲ πρὸς τὴν αἴσθησιν*). And all this implies that there is no unity existent *per se*."

b 15. **ἀδιαιρέτῳ τῆς ψυχῆς.** If this meant a part or faculty of the soul, the omission of any accompanying noun or pronoun, like *μέρει* or *τινί*, could be paralleled. Cf. 426 b 29 *ἀχώριστον καὶ ἐν ἀχωρίστῳ χρόνῳ*, 427 a 14 *ἔστιν ὡς κεχωρισμένῳ*, both of which passages are very similar to the one before us. Cf. also *De Sensu* 7, 449 a 8 *ἀνάγκη ἄρα ἕν τι εἶναι τῆς ψυχῆς, ᾧ ἅπαντα αἰσθάνεται*, 448 b 20 *ἅμα μέν, ἑτέρῳ δὲ τῆς ψυχῆς αἰσθάνεσθαι, καὶ οὐ τῷ ἀτόμῳ, οὕτω δ'* [*ἢ οὕτω*, coni. Ross] *ἀτόμῳ ὡς παντὶ ὄντι συνεχεῖ*, 449 a 19 *ὥστε καὶ αἰσθάνοιτ' ἂν ἅμα τῷ αὐτῷ καὶ ἑνί*. Here the faculty seems to be identified with its operation, *ἐνέργεια*. Cf. *Metaph.* 1075 a 3—5: if *νοῦς*, when it thinks *ὅσα μὴ ὕλην ἔχει*, is identical with *τὸ νοούμενον* and *ἡ νόησις* is identical with *τὸ νοούμενον*, then *ἡ νόησις* is identical with *νοῦς*. Themistius supplies *νοήσει*: 110, 18 H., 203, 11 Sp. *ἐν χρόνῳ ἀδιαιρέτῳ νοεῖ καὶ νοήσει ἀδιαιρέτῳ* [so Heinze], 110, 24 H., 203, 19 Sp. *ἀμερεῖ τῇ νοήσει*. Two of our inferior MSS., T and V, actually read *ψυχῆς νοήσει*. For *τῆς ψυχῆς*, not *τοῦ νοῦ*, cf. 430 a 13, 431 a 14.

b 16 **κατὰ συμβεβηκὸς...17 ἀδιαίρετα.** As we are here dealing with actual thinking, I take *ᾧ νοεῖ* to mean a single thought, one link in the chain of thoughts of which actual thinking consists: 407 a 7 *ἡ δὲ νόησις τὰ νοήματα*. It need not always mean, as *ᾧ διανοούμεθα* does 414 a 12 sq., 429 a 23, a part of the soul. Beyond this it is rash to assert anything confidently about the meaning of this sentence. Still, we may make conjectures and state divergent views. We have to find a predicate which *κατὰ συμβεβηκὸς* may qualify and a subject for that predicate. It would be natural to attach *κατὰ συμβεβηκὸς* to something expressed in the preceding sentence, which might serve as predicate; but this can hardly be *νοεῖ* or *ἀδιαίρετον* or *ἀδιαιρέτῳ*, for the specific unity is not *κατὰ συμβεβηκὸς νοητὸν* nor *κατὰ συμβεβηκὸς ἀδιαίρετον* and, even if the act of thinking it and the time in which it is thought were *per accidens* indivisible, the fact would not help to explain the words which follow. It only remains to understand *διαιρετὸν* or *διαιρετά*. Something, we may assume, is declared to be accidentally divisible. What is *per se* indivisible may be *per accidens* divisible and, if we take this clue, there are two possible subjects for the predicate "accidentally divisible." These are (1) the notional unity itself and (2) the act of thinking it and the time which that act takes.

Suppose we take (1): the specific unity, then, is accidentally divisible, but, the writer continues, not in the sense that the act of thinking it and the time in which it is thought are divisible, but in the sense that they are indivisible. Their indivisibility, then, we learn, renders any divisibility which can be attached to the specific unity purely extraneous, adventitious, foreign to its nature. It appears to follow that the act of thinking an infima species, e.g. humanity, is instantaneous. As Them. would say, we do not think half the notion when we hear the first two syllables "human-" and the rest of it when we catch "ity": cf. Them. 110, 22 H., 203, 17 Sp. *ἀκούει μὲν γὰρ ἐν χρόνῳ, νοεῖ δὲ οὐκ ἐν χρόνῳ, ἀλλ' ἐν τῷ νῦν ὅπερ ἢ οὐδὲ ὅλως χρόνος ἐστὶν ἢ ἀμερὴς χρόνος. καὶ αὐτὸς δὲ ἀμερεῖ τῇ νοήσει νοεῖ, οὐ συμπαρατεινόμενος τῷ ὀνόματι οὐδὲ κατὰ μόριον τοῦ ὀνόματος καὶ καθ' ἑκάστην συλλαβὴν προσλαμβάνων τι μόριον τοῦ νοήματος,*

ἀλλὰ τὸ μὲν ὄνομα διαιρετόν, ἀδιαίρετον δὲ τὸ νόημα. εἰ δὲ καὶ τὸ νόημα διαιρετὸν φιλονικοίη τις λέγειν, κατὰ [τὸ] συμβεβηκὸς ἂν αὐτὸ λέγοι διαιρετόν, καὶ οὐχ ᾗ αὐτὸ διαιρετόν...πολλὰ δὲ κατὰ συμβεβηκὸς διαιρετὰ καὶ οὐχ ᾗ αὐτὰ διαιρετά, ἀλλ' ᾗ ἐκεῖνα δι' ὧν γνωρίζεται [by ἐκεῖνα Them. intends here τοὔνομα καὶ ἡ φωνή]. On this view ἐκεῖνα anticipates ᾧ νοεῖ...17 χρόνῳ and refers exclusively to the act of thought, and the time, relative to the specific unity, while ᾗ, "so far as," approximates to "because": οὐχ ᾗ...ἀλλ' ᾗ, non quo...sed quia. Or, again, it is conceivable that ἐκεῖνα, ᾧ νοεῖ καὶ ἐν ᾧ χρόνῳ may refer back to the act and time of thinking τὰ μήκη, and then ᾗ will mean "in the same way as," implying ταύτῃ with the predicate διαιρετόν. For when the object is a quantum, the act of thinking it may become two acts, the time two times, as we saw b 9—13 *supra*.

(2) But let us suppose that the time and the act of thought are made the subject to a predicate "accidentally divisible." We have now to enquire what is meant by ἐκεῖνα. Presumably it is the act and time of thinking in the former case when the object was something continuous, like length. Or it might be τὰ μήκη themselves. Then the words mean: "but in this case the act and time of thinking are *per accidens* divisible, not in the same way (viz. *per se*) as the act and time of thinking in the former case [or the objects of thought in the former case] are divisible, but in the same way (viz. *per accidens*) as they are indivisible." Formerly, when the object was a quantum, the act and time of thinking, like the object, were *per se* divisible and only *per accidens* indivisible; now that the object is an infima species, the act and time of thinking it are *per se* indivisible and only *per accidens* divisible.

Prof. Bywater's transposition (see critical *notes*) would have the effect of referring this passage and what follows it as far as b 20 μήκει exclusively to the first kind of ἀδιαίρετα, which are quanta, and he would alter b 16 ᾧ νοεῖ into ὃ νοεῖ (=τὸ μῆκος). But see Maier, *op. cit.* I., p. 32, *n.* 1. Torstrik was led to bracket the words b 17 ἀλλ' ᾗ ἀδιαίρετα by his construction of the previous line, viz. κατὰ συμβεβηκὸς δέ, καὶ οὐχ ᾗ ἐκεῖνα [int. νοεῖ], διαιρετὰ ᾧ νοεῖ καὶ ἐν ᾧ χρόνῳ. Thus the way in which he took ᾗ ἐκεῖνα [int. νοεῖ] led him justly to the conclusion that ᾗ ἀδιαίρετα comes to the same thing and is superfluous. Biehl followed Torstrik in bracketing the clause; but, if recourse must be had to the knife, it would be preferable to adopt Prof. J. Cook Wilson's suggestion and bracket b 16 ᾧ νοεῖ καὶ ἐν ᾧ χρόνῳ. Then ἐκεῖνα must refer to τὰ μήκη and it is not impossible that a marginal gloss ὃ νοεῖ καὶ ἐν ᾧ χρόνῳ, pointing this out correctly, should, when incorporated in the text, become altered to ᾧ νοεῖ κτέ. by assimilation to b 15 ἀδιαιρέτῳ τῆς ψυχῆς.

b 17. ἔνεστι γὰρ κἀν τούτοις. Taking the text as we find it, we must by τούτοις understand τοῖς τῷ εἴδει ἀδιαιρέτοις. Thus τούτοις, as contrasted with b 16 ἐκεῖνα, will be the specific unities themselves, as distinct from something; either, on one view, from the act and time of thinking them, or, on another view, from the act and time of thinking τὰ μήκη, or from τὰ μήκη themselves. It is true the Greek commentators unanimously refer τούτοις to τὰ συνεχῆ: Them., 110, 36 sqq. H., 204, 7 sqq. Sp., Simpl. 256, 4 sqq., Philop. 551, 22 sqq. (the last more definitely makes them time and mental image, obviously connecting κἀν τούτοις with 430 b 16 ᾧ νοεῖ καὶ ἐν ᾧ χρόνῳ). It is not, however, necessary that, because ἀδιαίρετόν τι makes both time and length one, time and length and other continuous quantities should be intended by κἀν τούτοις. If we attend to the καί, the presumption is rather the other way.

b 18. ἀλλ' ἴσως οὐ χωριστόν. This phrase, defining the nature of that unity of indivisibles which belongs to τὰ τῷ εἴδει ἀδιαίρετα, I take to be a disclaimer of

the Pythagorean and Platonic doctrine of unity, for which see *Metaph.* 1053 b 9—1054 a 19. Unity is, A. holds, no separately existent entity in the universe, there is no *οὐσία τις αὐτοῦ καθ' αὑτὸ τοῦ ἑνός*, *ib.* 1053 b 11, 1088 a 3, no *φύσις τις χωριστὴ τῶν ἄλλων*, 1053 b 22. Unity is to be found in the things which the mind thinks as one, whether species or quantities, and nowhere else. The same question is treated even more fully in *Metaph.* 1045 a 7—b 7: the conclusion reached is stated most explicitly 1045 a 31 *οὐδὲν γάρ ἐστιν αἴτιον ἕτερον τοῦ τὴν δυνάμει σφαῖραν ἐνεργείᾳ εἶναι σφαῖραν, ἀλλὰ τοῦτ' ἦν τὸ τί ἦν εἶναι ἑκατέρῳ* and 1045 a 36 *ὅσα δὲ μὴ ἔχει ὕλην, μήτε νοητὴν μήτε αἰσθητήν, εὐθὺς ὅπερ ἕν τι [εἶναί] ἐστιν ἕκαστον, ὥσπερ καὶ ὅπερ ὄν τι, τὸ τόδε, τὸ ποιόν, τὸ ποσόν. διὸ καὶ οὐκ ἔνεστιν ἐν τοῖς ὁρισμοῖς οὔτε τὸ ὂν οὔτε τὸ ἕν, καὶ τὸ τί ἦν εἶναι εὐθὺς ἕν τί ἐστιν ὥσπερ καὶ ὄν τι. διὸ καὶ οὐκ ἔστιν ἕτερόν τι αἴτιον τοῦ ἓν εἶναι οὐδενὶ τούτων, οὐδὲ τοῦ ὄν τι εἶναι· εὐθὺς γὰρ ἕκαστόν ἐστιν ὄν τι καὶ ἕν τι, οὐχ ὡς ἐν γένει τῷ ὄντι καὶ τῷ ἑνί, οὐδ' ὡς χωριστῶν ὄντων παρὰ τὰ καθ' ἕκαστα.* The sphere presents the more ordinary case of something compounded of form and matter, though here the *ὕλη* is *νοητή*, not *αἰσθητή*: the line, *τὸ μῆκος*, with which we have been dealing 430 b 8 sqq. in this respect resembles the sphere. The cause of the unity of the line, as of the sphere, is the *τί ἦν εἶναι*. From such compounds A. passes on to quiddities, which have no matter, and asserts in the plainest terms that they require no external cause of unity, *αἴτιον τοῦ ἓν εἶναι*, for each of them is the cause of its own unity, being itself *τί ἦν εἶναι*, and nothing else. Yet they are immanent in, not separate from, particular things, *οὐδ' ὡς χωριστῶν ὄντων παρὰ τὰ καθ' ἕκαστα*. With this agrees precisely *Metaph.* 1052 a 29 *τὰ μὲν δὴ οὕτως ἓν ᾗ συνεχὲς ἢ ὅλον, τὰ δὲ ὧν ἂν ὁ λόγος εἷς ᾖ. τοιαῦτα δὲ ὧν ἡ νόησις μία· τοιαῦτα δὲ ὧν ἀδιαίρετος· ἀδιαίρετος δὲ τοῦ ἀδιαιρέτου εἴδει ἢ ἀριθμῷ.* The term "one" is applied not only to things continuous, but also to those things which have a single concept or a single definition, and such are those which can be thought in a single mental act, in an indivisible act of thought, the mental act being indivisible, provided its object is itself either specifically or numerically indivisible: whence it follows that primarily unity belongs to that which makes substances one, *Metaph.* 1052 a 33 *ὥσθ' ἓν ἂν εἴη πρῶτον τὸ ταῖς οὐσίαις αἴτιον τοῦ ἑνός*. No one who has followed the argument so far can fail to identify this with the *τί ἦν εἶναι*. Cf. *ib.* 1016 a 32—b 3, of which I cite 1016 b 1 *ὅλως δὲ ὧν ἡ νόησις ἀδιαίρετος ἡ νοοῦσα τὸ τί ἦν εἶναι, καὶ μὴ δύναται χωρίσαι μήτε χρόνῳ μήτε τόπῳ μήτε λόγῳ, μάλιστα ταῦτα ἕν, καὶ τούτων ὅσα οὐσίαι.* Maier, however, whose exposition has greatly contributed to clear up the whole passage, takes the words of our lemma somewhat differently, I., p. 32, *note*. He compares *χωρὶς* b 11 *supra* and understands A. to assert here that the mental act is incapable of being logically divided, whereas in contemplating a length the act, though itself one and indivisible, could, if we chose, be separated or divided. In that case nothing is added by *οὐ χωριστόν*, for that the act is *ἀδιαίρετον καθ' αὑτὸ* is implied in 430 b 15—17 on Maier's own interpretation of that passage. **ὅ**: "and this it is which," a use of the relative more frequent in Latin than in Greek. Cf. 428 b 24, *note*. Whatever it is which constitutes the unity of the specific notion also makes continuous quantities one.

b 19. μῆκος. Supply *ἕν*. Cf. *Metaph.* 994 b 23 *οὐ γὰρ ὅμοιον ἐπὶ τῆς γραμμῆς, ἣ κατὰ τὰς διαιρέσεις μὲν οὐχ ἵσταται, νοῆσαι δ' οὐκ ἔστι μὴ στήσαντα.* **καὶ τοῦθ' ὁμοίως...20 μήκει.** This sentence shows that length and time merely stand for continuous, and therefore divisible, quantities in general. The emphasis is on *τῷ συνεχεῖ*. That the continuity and therefore the unity of the continuous has its cause in the form and quiddity may be inferred from *Metaph.* 1052 a 19 sqq., where, after laying down that what is continuous is *ipso facto* in a greater or

less degree one, A. continues (a 22) ἔτι τοιοῦτον [int. ἓν] καὶ μᾶλλον τὸ ὅλον καὶ ἔχον τινὰ μορφὴν καὶ εἶδος· μάλιστα δ' εἴ τι φύσει τοιοῦτον καὶ μὴ βίᾳ...ἀλλ' ἔχει τι ἐν αὐτῷ τὸ αἴτιον αὐτῷ τοῦ συνεχὲς εἶναι. Cf. *Metaph.* 1053 a 24 ἴσως γὰρ πᾶν συνεχὲς διαιρετόν. Surfaces and solids, no less than lines, are continuous and divisible, εἰς συνεχῆ δυνάμει διαιρετά, according to *Metaph.* 1020 a 8—14. This is the fundamental assumption of the mathematical sciences, καὶ τὸ νοητὸν λαμβάνουσι διαιρετόν, *De Caelo* III. 7, 306 a 27, and it applies to μῆκος no less than to σῶμα, of which A. is there speaking.

430 b 20—31. As to the way in which we know the point and indivisibles of that kind, it is like the way in which we know privation (στέρησις). The point, being the negation or antithesis of the divisible, is known exactly as evil and black are known by negation of the positive qualities good and white [§ 5]. And, if this be so, the knowing subject will be a potentiality of contraries contained within itself. If there is any knowing subject in whose thought there is no contrary, this knowing subject will be its own object of knowledge, will be actually operant and immaterial [§ 6]. All predications which connect an attribute with a subject are true or false, but this is not always the case with thought. When we think the concept in terms of the quiddity, we do not predicate any attribute of a subject. Such exercise of thought upon immaterial objects corresponds to the exercise of a special sense on its proper object, which is never fallacious [§ 7].

430 b 20 **ἡ δὲ στιγμὴ...23 γνωρίζει.** A new paragraph should begin here. On this passage see Them. 111, 13—31 H., 204, 27—205, 24 Sp., Simpl. 256, 19—257, 10, Philop. 552, 2—26. **πᾶσα διαίρεσις,** "every dividing mark." This will denote the geometrical point, in so far as it serves to divide lines or lengths, or forms a kind of limit or boundary: cf. *Metaph.* 1060 b 14 sq., 994 b 23 sq. It will also denote, as Them. and Simpl. hold, the present instant, the "now," regarded as dividing time past from time future: probably also the arithmetical unit, μονάς. The line and surface may also be included, but only in so far as they are privations, i.e. the surface because it is without thickness and the line because it is without breadth or thickness. Cf. *Metaph.* 1016 b 24 τὸ μὲν οὖν κατὰ τὸ ποσὸν καὶ ᾗ ποσὸν ἀδιαίρετον, τὸ μὲν πάντῃ καὶ ἄθετον λέγεται μονάς, τὸ δὲ πάντῃ καὶ θέσιν ἔχον στιγμή, τὸ δὲ μοναχῇ [int. διαιρετὸν] γραμμή, τὸ δὲ διχῇ ἐπίπεδον, τὸ δὲ πάντῃ καὶ τριχῇ διαιρετὸν κατὰ τὸ ποσὸν σῶμα. In *Metaph.* 1002 a 18 ἔτι δὲ φαίνεται ταῦτα [int. τὰ μήκη καὶ αἱ στιγμαὶ] πάντα διαιρέσεις ὄντα τοῦ σώματος, τὸ μὲν εἰς πλάτος, τὸ δ' εἰς βάθος, τὸ δ' εἰς μῆκος. πρὸς δὲ τούτοις ὁμοίως ἔνεστιν ἐν τῷ στερεῷ ὁποιονοῦν σχῆμα ἢ οὐδέν, *ib.* a 34—b 11, 994 b 22—25 not only is the point treated as the division of a line, but the line as the division of a surface, and the surface as the division of a solid. When the divided parts are reunited, the divisions disappear. Thus if *AC* and *CB*, the segments of the line *AB*, are reunited, the point *C*, which had two functions, serving as the extremity of *AC* and the extremity of *CB*, disappears.

b 21. **τὸ οὕτως ἀδιαίρετον.** The point and the "now" are indivisibles of another order from those previously considered. They are indivisible not καθ' αὑτά, but by absence or privation of extension and divisibility, τῇ στερήσει τοῦ συνεχοῦς (Them. 111, 15 H., 205, 1 Sp.), πάντῃ μὲν ἀδιαίρετα, κατὰ τὴν ἀπόπτωσιν δὲ τῶν διαιρετῶν ἔχοντα τὸ ἀδιαίρετον (Simpl. 256, 20 sq.). The surface is less continuous and therefore less divisible than the solid through the absence of the dimension of depth; the line less continuous and divisible than the surface, because it has neither breadth nor depth, although it is still extended, and therefore divisible, in the one dimension of length; the point, losing even this

last dimension, ceases to be divisible at all: unlike the line and surface, it is πάντῃ ἀδιαίρετον, Simpl. 256, 21—27, Philop. 552, 16—18. **δηλοῦται**, "is disclosed or discovered to us." Cf. *Metaph.* 1054 a 26 λέγεται δ' ἐκ τοῦ ἐναντίου καὶ δηλοῦται τὸ ἕν, 1032 b 4 ἐκείνης γὰρ [int. τῆς ὑγιείας] ἀπουσίᾳ δηλοῦται ἡ νόσος. The word δηλοῦν is a vague, non-technical term like γνωρίζειν, however the knowledge be obtained. **ὥσπερ ἡ στέρησις.** As, e.g., rest is perceived by the negation of motion, τῷ μὴ κινεῖσθαι, and number by the negation of continuity, τῇ ἀποφάσει τοῦ συνεχοῦς, 425 a 18 sq. So, too, unity by the negation of plurality, as from the beginning of our experience we are more familiar with the many than the one, *Metaph.* 1054 a 20—29.

b 23. **δεῖ δὲ δυνάμει εἶναι τὸ γνωρίζον,** "but the apprehending mind must be potentially the contraries." That is, if you are to know κακόν, you must have ἀγαθὸν to know it. Cf. Simpl. 256, 33 τὸ σκότος τῷ μὴ ὁρᾶν τὸ φῶς [cf. 425 b 20—22], καὶ τὸ κακὸν τῷ μὴ ὁρᾶν τὸ ἀγαθὸν ἐν αὐτῷ, ἐπεὶ τῇ τοῦ ἀγαθοῦ ἐννοίᾳ καὶ τῇ τοῦ φωτὸς καὶ τὸ κακὸν καὶ τὸ σκότος γινώσκομεν, ὡς τῇ τοῦ κανόνος ὀρθότητι τὸ στρεβλόν (cf. 411 a 5 sq.).

b 24. **ἐνεῖναι ἐν αὐτῷ.** If we adopt this reading, the subject is τὸ δυνάμει ἐναντίον: "the potential contrary must be in it (the apprehending mind)." Biehl follows cod. L in writing ἓν εἶναι and omits the preposition ἐν before αὐτῷ. By ἓν must then be understood one of the two contraries, which Bywater's conjecture ἐναντίον εἶναι ἐν αὐτῷ more clearly expresses, though we might have expected ἓν τῶν ἐναντίων. Biehl's text is open to the objection that it would naturally be taken to mean "the knowing subject must be one and the same with it," i.e. with the contrary. I may add that the reading καὶ ἓν εἶναι is by a slip attributed to cod. E in the Berlin Aristotle, whereas upon 430 a 23 Bekker had noted that a leaf of cod. E beginning there was missing.

b 24. **εἰ δέ τινι μή ἐστιν ἐναντίον.** There can be no doubt that this is an allusion to the supreme cause, the πρῶτον κινοῦν ἀκίνητον of *Metaph.* 1075 b 20 καὶ τοῖς μὲν ἄλλοις ἀνάγκη τῇ σοφίᾳ καὶ τῇ τιμιωτάτῃ ἐπιστήμῃ εἶναί τι ἐναντίον, ἡμῖν δ' οὔ· οὐ γάρ ἐστιν ἐναντίον τῷ πρώτῳ οὐδέν. As we know from *Metaph.* Λ., cc. 6—10, this supreme cause thinks itself and is a being free from matter and necessarily free from contrariety. You know the ἐναντίον in virtue of the ἐναντίον in your own mind. The supreme cause has no contrary to it. Thus here there is nothing that helps us to understand the working of the human mind. Cf. Them. 111, 35 H., 206, 2 Sp. τοιοῦτος δὲ ὅ τε ἔξωθεν καὶ πολλῷ μᾶλλον τὸ πρῶτον αἴτιον ὅσῳ καὶ μᾶλλον ἀπήλλακται τοῦ δυνάμει· διὰ τοῦτο γὰρ οὗτος καὶ τὸ μάλιστα ὂν καὶ τὸ μάλιστα εἶδος νοεῖ καὶ ποῤῥωτάτω στερήσεως καὶ ἀμορφίας· τοιοῦτος δὲ αὐτός, ἑαυτὸν ἄρα νοεῖ, καὶ οὗτός ἐστιν οὗ τὴν οὐσίαν ἐνέργειαν λέγειν προσήκει καὶ ὂν ἀκριβῶς χωριστόν, οὐδὲ ἀκαρεὶ προσαρμοζόμενον τῷ δυνάμει.

b 25. **[τῶν αἰτίων].** These words seem out of place, for we have been dealing with the knowing subject, τὸ γνωρίζον, and there seems to be no reason why at this point we should pass to consider the causes and principles of things. Moreover, the position of the words would seem to imply that τὸ γνωρίζον is itself an αἴτιον. By ἐναντίον must be meant the opposite, by becoming which a thing ceases to be what it is, in accordance with A.'s own explanation of becoming, γένεσις ἁπλῆ: see *Metaph.* 1069 b 3—20. Such becoming is inexplicable without the assumption of ὕλη, and when all contrariety, contingency, matter and potentiality are excluded, there remains nothing but ἐνέργεια, which, according to A., takes the form of thought. In *Metaph.* 1075 a 25—1076 a 5 the criticism of all preceding systems turns on their assumption of contraries for principles, and A. claims that not only τὸ πρῶτον κινοῦν, but also matter, in his own system has no contrary: *ib.* 1075 a 34 ἡ γὰρ ὕλη ἡ μία οὐδενὶ ἐναντίον. Form no doubt is

contrasted with, and antithetic to, matter, as (*Metaph.* 983 a 31 sq.) end to the moving cause, but not all **ἀντικείμενα** are **ἐναντία**. I therefore follow Zeller in bracketing **τῶν αἰτίων**, being content to take **τινὶ** as standing for **τῶν γνωριζόντων τινί**. Bywater, p. 60, supposes the words to have crept in from a marginal gloss.

b 26. ἔστι δ' ἡ μὲν φάσις τι κατά τινος. With *τι κατά τινος* supply *κατηγορούμενον*. Assertion is something said of something; that is, a predication of a certain attribute of a certain subject. A. here uses the term *φάσις* in the wider sense, in which it includes both *κατάφασις*, positive assertion or affirmation, and *ἀπόφασις*, negative assertion or negation. Sometimes, however, he uses it for *κατάφασις* only, as in *Metaph.* 1008 a 34 *ἔτι εἰ ὅταν ἡ φάσις ἀληθὴς ᾖ, ἡ ἀπόφασις ψευδής, κἂν αὕτη ἀληθὴς ᾖ, ἡ κατάφασις ψευδής, οὐκ ἂν εἴη τὸ αὐτὸ ἅμα φάναι καὶ ἀποφάναι ἀληθῶς*, *De Interpr.* 21 b 21 *φάσεις καὶ ἀποφάσεις*: also *Metaph.* 1012 a 4 *ὅταν μὲν ὡδὶ συνθῇ φᾶσα ἢ ἀποφᾶσα, ἀληθεύει.* Cf. 431 a 9 *καταφᾶσα ἢ ἀποφᾶσα* followed 431 a 16 by *φήσῃ ἢ ἀποφήσῃ*, 431 b 8 by *ὅταν εἴπῃ*, which last is like *φάσις* here. Cf. also Bonitz *ad Metaph.* Θ., c. 10, p. 410, *note*, cited *supra* in *note* on 430 a 3. As may be seen from *Soph.* 263 E sqq. cited p. 459 *supra*, Plato has opposed *φάσις* to *ἀπόφασις* as affirmation to negation. Neither *κατάφασις* nor *καταφάναι* appears in Plato's writings. The inconvenience of using the same term both in a generic and specific sense no doubt led to the adoption of *κατάφασις* for "affirmation."

b 27. ἀληθὴς ἢ ψευδὴς πᾶσα. Such assertion must in every case be either true or false. If we compare 430 a 27 sqq., it will appear that *φάσις* here, as used of predication, is more precisely the particular kind of *σύνθεσις νοημάτων ὥσπερ ἓν ὄντων* in which truth and falsehood reside. **ὁ δὲ νοῦς οὐ πᾶς**, int. *ἀληθὴς ἢ ψευδής ἐστι.* This simply repeats the opening words of the chapter, and our next clause proves that under *ἀδιαίρετα* there the *τί ἦν εἶναι* is included.

b 28. ὁ τοῦ τί ἐστι κατὰ τὸ τί ἦν εἶναι, int. *νοῦς*, which, however, must be used here to denote the mind when it thinks and therefore can differ hardly at all from *νόησις*. Cf. *Metaph.* 1075 a 3—5. The genitive *τοῦ τί ἐστι* is objective. For the relation of *τί ἐστι*, the generic notion or "What" of a thing, to *τί ἦν εἶναι*, its constitutive essence or quiddity, see *notes* on 412 b 11 and 402 a 12. The force of *κατὰ* seems to be restrictive, "as determined by," or "in conformity with, the quiddity." Cf. 404 b 5, *note*. **ἀληθής**, not liable to be false as well as true, as is the case with a predicate. A. expresses this by saying "is true and not a predication," something predicated of something. Cf. 428 a 17 *τῶν ἀεὶ ἀληθευόντων...οἷον...νοῦς.*

b 29. ἀλλ' ὥσπερ τὸ ὁρᾶν τοῦ ἰδίου ἀληθές. The objective genitive would be more natural if *ἡ ὄψις* had preceded, instead of *τὸ ὁρᾶν*. Cf. Philop. 557, 3 *τί ἐστι τὸ ὁρᾶν τοῦ ἰδίου; ἀντὶ τοῦ ὁρᾶν τὸ ἴδιον καὶ ἰδιοπραγεῖν, οἷον τὸ ὁρᾶν τὸ λευκὸν καὶ μόνον, μηκέτι δὲ καὶ τὴν οὐσίαν ᾗτινι τὸ λευκὸν τοῦτο ὑπάρχει.* Them. avoids the difficulty when he paraphrases 112, 16 H., 206, 25 Sp. *ἡ ὄψις μόνον μὲν κρίνουσα τὸ λευκὸν κτέ.* If it is not an objective genitive, it can hardly be regarded as partitive, but it might be a genitive of respect, to which Simpl. 262, 2 *ἡ ὄψις...ἀεὶ τῶν ἰδίων ἀληθής*, "true in respect of its proper objects," lends some support. But it must be pointed out that Simpl. has previously used expressions which imply an objective genitive: 261, 35 *τῇ τῶν ἰδίων ὁρατῶν ὄψει* and 261, 36 *πᾶσαι τῶν ἰδίων ἀληθεῖς καὶ ἁπλῶν εἰσι γνώσεις.*

b 30. οὕτως ἔχει ὅσα ἄνευ ὕλης: so it is with pure or immaterial concepts or quiddities. The mind either apprehends them or it does not. There we have true unities. This explains the remark 430 b 14 sq. about *τὸ εἴδει ἀδιαίρετον* and its instant apprehension by one indivisible mental act. When we are in posses-

sion of such a concept, there is no question of its truth. When, however, the mind comes to predicate one of these concepts, e.g. goodness, of a given subject, then error is possible: just as with objects of sense we may be mistaken in judging the white object to be Cleon.

CHAPTER VII.

In this chapter A. is still dealing with the operation of thought. He now makes the transition from theoretical to practical intellect, frequently employing the analogy of sense-perception.

431 a 1—20. Actual knowledge is identical with the thing known. Although in the individual potential knowledge, i.e. the faculty of knowing, precedes actual knowledge, no such priority attaches to it absolutely. For all becoming implies some actual existence as its cause. Thus we find that it is the sensible object which raises the sense from potential to actual existence, a transition which, properly speaking, is no passive affection or qualitative change at all, but rather an activity: and if we do call it motion, of which qualitative change is a species, we put a different meaning on the term motion, motion being by the definition activity of what is incomplete, while activity in the absolute sense, activity of that which is complete, is something distinct from motion in the ordinary sense [§ 1]. Perceiving something by sense, then, corresponds to simply naming it in language or apprehending it in thought. So far there is neither affirmation nor negation. But desire of what is pleasant or aversion to what is painful, as it were, converts the simple assertion of sense that there is an object into an affirmation or negation respecting it. There is not one faculty of desire and another faculty of aversion, but to feel pleasure or pain is to energise with the sensitive mean upon good or bad, as such. And, when we thus energise, we feel actual desire or actual aversion, though logically the faculty of sense can be distinguished from that of desire or aversion [§ 2]. For the thinking soul mental images take the place of present sensations and its affirmative or negative judgment of good or bad is desire or aversion. Hence the soul never thinks without a mental image. Here the analogy holds with sense. In desire and aversion there is a single faculty of thought which affirms or denies, just as there is a single central faculty of sense to which impressions of the several special senses are referred [§ 3].

431 a 1 **τὸ δ' αὐτό ἐστιν...3 χρόνῳ.** This passage seems as much in place here as in 430 a 19—21. Themistius, however, having paraphrased it there, omits it here. Philop. and Simpl. attest the repetition and try to account for it. What is more important is that Alex. Aphr. found the text in its present condition: cf. Philop. 558, 4 *ἐνταῦθα δὲ γενόμενος Ἀλέξανδρός φησιν ὅτι τετάρακται ὁ λόγος, εἴπερ καὶ ἄνω διέκρινε τὸν δυνάμει νοῦν ἀπὸ τοῦ ἐνεργείᾳ, καὶ νῦν δὲ τὸ αὐτὸ ποιεῖ.* The suggestion that the passage is intrusive in either context should be scouted. In c. 5 it is absolutely necessary, and here the clause a 3 *ἔστι γὰρ ἐξ ἐντελεχείᾳ ὄντος πάντα τὰ γιγνόμενα* will not stand without it. Why should not A. repeat himself when in the present chapter he comes to deal with *διάνοια πρακτική* and to contrast it with sense?

a 3. **ἔστι γὰρ...τὰ γιγνόμενα.** These words may be understood quite generally: cf. 417 a 17 sq. In *Metaph.* Z., cc. 7—9 becoming, whether in nature, in art or even in *τοῖς ἀπὸ ταὐτομάτου* (1032 a 13), is exhaustively discussed. Although A. there has other objects in view, the truth of this principle is

sufficiently established for the first of A.'s categories (*οὐσία* = *τόδε τι*), e.g. 1034 b 16 *ἀλλ' ἴδιον τῆς οὐσίας ἐκ τούτων λαβεῖν ἔστιν ὅτι ἀνάγκη προϋπάρχειν ἑτέραν οὐσίαν ἐντελεχείᾳ οὖσαν ἣ ποιεῖ, οἷον ζῷον, εἰ γίγνεται ζῷον.* Actual existence precedes becoming, is its logical *prius*: cf. *Metaph.* 1071 b 14—22. The efficient cause is always actually existent, though the material cause may be described as potentiality or even as non-existent: cf. *Metaph.* 1069 b 15—20. Again, in the sphere of becoming, there is a close correspondence between the producing cause and the effect produced. The cause is already that which the thing produced becomes: cf. *Metaph.* 1069 b 31 *ὥστ' εἰ καὶ ἡ ὕλη μία, ἐκεῖνο ἐγένετο ἐνεργείᾳ ὃ ἡ ὕλη ἦν δυνάμει*, also 1049 b 24 *αἰεὶ γὰρ ἐκ τοῦ δυνάμει ὄντος γίγνεται τὸ ἐνεργείᾳ ὂν ὑπὸ ἐνεργείᾳ ὄντος, οἷον ἄνθρωπος ἐξ ἀνθρώπου, μουσικὸς ὑπὸ μουσικοῦ, αἰεὶ κινοῦντός τινος πρώτου· τὸ δὲ κινοῦν ἐνεργείᾳ ἤδη ἐστίν*, 1072 b 30—1073 a 3; see especially 1072 b 35 *τὸ γὰρ σπέρμα ἐξ ἑτέρων ἐστὶ προτέρων τελείων, καὶ τὸ πρῶτον οὐ σπέρμα ἐστίν, ἀλλὰ τὸ τέλειον· οἷον πρότερον ἄνθρωπον ἂν φαίη τις εἶναι τοῦ σπέρματος, οὐ τὸν ἐκ τούτου γενόμενον, ἀλλ' ἕτερον ἐξ οὗ τὸ σπέρμα.* The purpose of Aristotle in *Metaph.* Θ., c. 8 is to establish the priority of *ἐνέργεια* to *δύναμις* in the wider sense of *δύναμις* as *πᾶσα ἀρχὴ κινητικὴ ἢ στατική*: cf. 1049 b 4 *ἐπεὶ δὲ τὸ πρότερον διώρισται ποσαχῶς λέγεται, φανερὸν ὅτι πρότερον ἐνέργεια δυνάμεώς ἐστιν*, and 1049 b 10 *πάσης δὴ τῆς τοιαύτης* [int. *δυνάμεως*] *προτέρα ἐστὶν ἡ ἐνέργεια καὶ λόγῳ καὶ τῇ οὐσίᾳ· χρόνῳ δ' ἔστι μὲν ὥς, ἔστι δ' ὡς οὔ*: i.e., as he goes on to explain 1049 b 18, *τὸ τῷ εἴδει τὸ αὐτὸ ἐνεργοῦν πρότερον, ἀριθμῷ δ' οὔ.* "Take a man now existing and now seeing, or corn now ripe in the field: these doubtless, before they came into their present condition, must have pre-existed in Potentiality; that is, there must have pre-existed a certain matter—seed or a something capable of vision—which at one time was not yet in a state of Actuality. But prior to this matter there must have existed other Actualities [of the same species] by which this matter was generated" (Grote's Paraphrase, vol. II., p. 363, 1st edition, p. 616, 2nd edition). Again, cf. *De Gen. An.* II. 1, 734 a 29 *λόγος δὲ τούτου, ὅτι ὑπὸ τοῦ ἐντελεχείᾳ ὄντος τὸ δυνάμει ὂν γίνεται ἐν τοῖς φύσει ἢ τέχνῃ γινομένοις, ὥστε δέοι ἂν τὸ εἶδος καὶ τὴν μορφὴν ἐν ἐκείνῳ εἶναι.*

a 4 φαίνεται δὲ τὸ μὲν αἰσθητὸν...5 ἐνεργείᾳ ποιοῦν, i.e. *ἐνεργείᾳ αἰσθητικὸν ποιοῦν.* We find the general rule that all which comes into being is derived from something actually existent confirmed in the case of the several senses, as was explained 418 a 3—6, also 417 b 20 *τοῦ μὲν τὰ ποιητικὰ τῆς ἐνεργείας ἔξωθεν, τὸ ὁρατὸν καὶ τὸ ἀκουστόν*, 417 b 3 "sometimes it [*τὸ πάσχειν*] is rather a preservation of what is potentially existent by what is actually existent and like it, so far as likeness holds as between potentiality and actuality," 417 b 16 "the sensitive subject...once generated possesses sensation exactly in the same sense as we possess knowledge. And to have actual sensation corresponds to exercise of knowledge," of which latter it is said 417 b 6 sq. *ἢ οὐκ ἔστιν ἀλλοιοῦσθαι ἢ ἕτερον γένος ἀλλοιώσεως*, and again 417 b 13 *ἤτοι οὐδὲ πάσχειν φατέον ἢ δύο τρόπους εἶναι ἀλλοιώσεως*, 425 b 28 "It is possible to have hearing and yet not hear; again, that which is resonant is not always sounding. But when that which is capable of hearing actually hears and that which is capable of sounding sounds, the actual hearing and the actual sound occur simultaneously." Cf. also *Metaph.* 1010 b 35 *οὐ γὰρ δὴ ἥ γ' αἴσθησις αὐτὴ ἑαυτῆς ἐστίν, ἀλλ' ἔστι τι καὶ ἕτερον παρὰ τὴν αἴσθησιν, ὃ ἀνάγκη πρότερον εἶναι τῆς αἰσθήσεως· τὸ γὰρ κινοῦν τοῦ κινουμένου φύσει πρότερόν ἐστι. κἂν εἰ λέγεται πρὸς ἄλληλα ταῦτα, οὐδὲν ἧττον.*

a 6. διὸ ἄλλο εἶδος τοῦτο κινήσεως. As mentioned in *note* on 417 b 6, Alex. Aphr. proposed to call this a sort of *γένεσις* (*γίγνεσθαί πως*). Philop. 558, 31 calls it simply *μεταβολή*, following 417 b 14—16. Cf. *Eth. Nic.* 1174 b 12 *οὐδὲ*

γὰρ ὁράσεώς ἐστι γένεσις οὐδὲ στιγμῆς οὐδὲ μονάδος, οὐδὲ τούτων οὐθὲν κίνησις οὐδὲ γένεσις· οὐδὲ δὴ ἡδονῆς· ὅλον γάρ τι, also 1174 a 13—17.

a 7. ἡ δ' ἁπλῶς ἐνέργεια, "activity in the absolute sense." The test is that we can say ἅμα νοεῖ καὶ νενόηκεν, ἅμα ὁρᾷ καὶ ἑώρακεν, but no γένεσις or κίνησις proper is in this sense instantaneous. See *note* on 417 a 16. Cf. Simpl. 265, 13 ἡ ἄνευ τοῦ ἀτελοῦς οὖσα ἐνέργεια. Moreover, γένεσις or κίνησις is always for the sake of some end and ceases when this end is achieved, whereas the activity is for its own sake and instantaneously attains its end. Even if it has duration in time, like εὖ ζῆν, εὐδαιμονία, ἡδονή, it is complete (ὅλον τι) and perfect in every instant of such duration. Cf. generally *Eth. Nic.* 1174 a 13—1175 a 21, *Metaph.* 1048 b 18—35, 1050 a 23—b 2. **ἡ τοῦ τετελεσμένου,** when that which functions, ἐνεργεῖ, has attained its full development and perfection. Them. (112, 31 sq. H., 207, 14 sqq. Sp.) illustrates by the exercise and application of the ἐπιστήμων. He has completely formed the habit, and his exercise of it is complete. We are here thinking of the distinction between the continued process (κίνησις) and the result (ἐνέργεια) as compared in *Eth. Nic.* 1174 a 19 sqq. Of the former, κίνησις, Them. says: 112, 33 H., 207, 17 Sp. γενέσει μᾶλλον προσέοικεν ἢ τελειώσει.

a 8. τὸ μὲν οὖν αἰσθάνεσθαι. The transition from θεωρητικὸς to πρακτικὸς νοῦς, according to Simpl. (263, 37) and Philop. (558, 11), begins in the last section 431 a 4 φαίνεται κτέ. As in III., c. 4 A. made sense the starting-point for νοῦς θεωρητικός, so here again he makes sense the starting-point for νοῦς πρακτικός. This is to start with what is better known to us: experience shows that in whatever forms of life sensation is found, appetence goes with it. As Philop. brusquely says, 559, 7 δέον εἰπεῖν ὅτι ὁ πρακτικὸς νοῦς μετ' ὀρέξεως ἐνεργεῖ, εἶπεν αὐτὸς ὅτι μετ' αἰσθήσεως [int. ἐνεργεῖ], because it has been proved that ὄρεξις and αἴσθησις are τῷ ὑποκειμένῳ identical. See *note* on 414 b 1. In fact, the link between αἴσθησις (= ὄρεξις) and νοῦς πρακτικὸς is logical enunciation (φάναι). Perception in this connexion may be compared to simple naming of the subject and simple apprehension by the mind, *Metaph.* 1051 b 23 sqq. cited in next *note*. The passage 431 a 8—20 merely expands what has been implicitly stated 426 b 21 λέγει ἄρα τὸ αὐτό. ὥστε ὡς λέγει, οὕτω καὶ νοεῖ καὶ αἰσθάνεται, viz. unity of the judging faculty, whether in sense or thought. Cf. 432 a 16 τῷ τε κριτικῷ, ὃ διανοίας ἔργον ἐστὶ καὶ αἰσθήσεως. But the work of διάνοια, not fully explained 431 a 13—16, comes out more clearly when we reach 431 b 2 sqq.

a 8. τῷ φάναι μόνον καὶ νοεῖν. As just explained, φάναι, like λέγει 426 b 21, is the simple naming of a thing. Sense in apprehending its appropriate qualities is hardly ever mistaken (427 b 11 sq., 428 b 18 sq., 430 b 29) and the same is true of νοῦς, so far as it is concerned with ἀδιαίρετα: 430 a 26 περὶ ἃ οὐκ ἔστι τὸ ψεῦδος. Cf. *Metaph.* 1051 b 23 ἀλλ' ἔστι τὸ μὲν ἀληθὲς [ἢ ψεῦδος, τὸ μὲν] θιγεῖν καὶ φάναι [ἀληθές] (οὐ γὰρ ταὐτὸ κατάφασις καὶ φάσις), τὸ δ' ἀγνοεῖν μὴ θιγγάνειν. The implicit judgment of sense in cases of this kind is not so much "this is yellow," "that is green," τὶ κατά τινος, as "it is yellow," "it is green"; or "this sensation is a sensation of yellow or of green."

a 9. ὅταν δὲ ἡδὺ ἢ λυπηρόν, int. ᾖ τὸ αἰσθητόν (Torst.). To keep the subject, viz. ἡ αἴσθησις, the same in the dependent as in the principal clause, ὅν τι αἰσθάνηται might equally well be supplied. **οἷον καταφᾶσα ἢ ἀποφᾶσα.** The feminine participles show that ἡ αἴσθησις must be understood. By οἷον the analogy between sense and judgment, as well as their essential difference, is brought out. Sense does not really perform a synthesis such as was assigned to thought in 430 a 27—b 4. What it does is to pursue or shun. But therein is implied an inchoate synthesis, viz. of τὸ αἰσθητὸν and τὸ ἡδὺ or of τὸ αἰσθητὸν and τὸ λυπηρόν, an implicit judgment asserting that the sensible causes pleasure,

i.e. is relatively good, or that the sensible causes pain, i.e. is relatively evil. In short, pursuit or avoidance in the region of sense corresponds to a logical judgment of affirmation or denial, as is laid down *Eth. Nic.* 1139 a 21 *ἔστι δ' ὅπερ ἐν διανοίᾳ κατάφασις καὶ ἀπόφασις, τοῦτ' ἐν ὀρέξει δίωξις καὶ φυγή· ὥστ'...δεῖ... τόν τε λόγον ἀληθῆ εἶναι καὶ τὴν ὄρεξιν ὀρθήν,...καὶ τὰ αὐτὰ τὸν μὲν φάναι τὴν δὲ διώκειν.* Cf. 414 b 4 sq., Simpl. 265, 35 *ἐπειδὴ ἐν συμπλοκῇ πως καὶ ἡ τοιαύτη συνίσταται κρίσις τοῦ αἰσθητοῦ καὶ ὡς γνωστοῦ καὶ ὡς ἡδέος· διὰ γὰρ τοῦτο οἷον κατάφασις. τὸ δὲ οἷον, ἐπειδὴ κυρίως ἐν λογικῇ ἀνελίξει ἥ τε κατάφασις καὶ ἡ ἀπόφασις...*266, 3 *τὸ μὲν ἡδὺ διώκει ἡ αἴσθησις ὡς ἀγαθόν, τὸ δὲ λυπηρὸν ὡς κακὸν φεύγει ἡ αἴσθησις· λογικῆς γὰρ διακρίσεως τὸ ἀγαθὸν ἀπὸ τοῦ ἡδέος διορίζειν πολλάκις, τὸ δὲ κακὸν ἀπὸ τοῦ λυπηροῦ.* Sense takes what is pleasurable at the moment for what is so absolutely and for absolute good, 433 b 8—10.

a 10 καὶ ἔστι τὸ ἥδεσθαι...11 ᾗ τοιαῦτα. A. is obviously affecting a technical phraseology which I have tried to reproduce in my translation. The same conclusion as before is now put without the analogy of speech and thought, which, as always in A., go together. Cf. Simpl. 266, 12 *διὰ γὰρ τὸ τὸ αἰσθητικὸν σωματικῷ ὀργάνῳ πάντως χρῆσθαι τὰ ἐκείνου σωτήρια ἢ φθαρτικὰ πάθη γινώσκει τε καὶ ὡς οἰκεῖα ἢ ἀλλότρια τὰ μὲν ἀγαπᾷ τὰ δὲ φεύγει*, where the language seems coloured with the associations of the later schools. A. "defines pleasure and pain," says Grant, *Ethics* I[3], p. 256, "to consist in the 'consciousness, by means of the discriminating faculty of the senses, of coming into contact with good or evil.'" This is in accordance with Grant's conviction that occasionally the modern term "consciousness" is best fitted to express the deeper signification of *ἐνεργεῖν*. Cf. Simpl. 266, 5 *δηλοῖ δὴ ἡ δίωξις τὴν οἷον ἀγάπησιν καὶ μεταδίωξιν, ἡ δὲ φυγὴ τὴν ἀποστροφὴν καὶ ἀπόστασιν. καὶ ἐν μὲν τῷ ἥδεσθαι ἡ αἴσθησις ὡς ἀγαθοῦ ἀντέχεται τῆς οἰκείας ἐνεργείας, ἐν δὲ τῷ λυπεῖσθαι ὡς κακὴν ἀναίνεται.* The words of the text recall *Eth. Nic.* 1174 b 14 sqq., the well-known passage beginning *αἰσθήσεως δὲ πάσης πρὸς τὸ αἰσθητὸν ἐνεργούσης*, in which A., who consistently maintained that pleasure was akin to *ἐνέργεια* as distinct from *κίνησις*, expounds his theory that pleasure is the concomitant of normal activities and attends upon the functions of every faculty of sense or thought, though the highest pleasure is only experienced when the faculty, being perfect, works upon a perfect object: 1174 b 18 *καθ' ἑκάστην δὴ βελτίστη ἐστὶν ἡ ἐνέργεια τοῦ ἄριστα διακειμένου πρὸς τὸ κράτιστον τῶν ὑφ' αὐτήν.* In **τῇ αἰσθητικῇ μεσότητι** we get a reminder of the unity of sense: cf. *infra* 431 a 19. We have been told before (424 a 4 sqq.) that sense is a sort of mean between the opposite sensibles and that it is in virtue of this that sense pronounces on its object, since the mean pronounces on the extremes, becoming to each of them the opposite extreme; from which the dictum "excellens sensibile corrumpit sensum," 424 a 28 sqq., is simply a corollary. **ᾗ τοιαῦτα.** Philoponus rightly explains these words: 559, 10 *καλῶς πρόσκειται τὸ* **ᾗ τοιαῦτα**· *οὐδὲ γὰρ αὐτὰ καθ' ἑαυτὰ ἀγαθά ἐστιν ἢ κακά, ἀλλ' ὡς πρὸς τὸ ζῷον, ὡς τὸ μὲν σῷζον λέγεσθαι ἀγαθόν, τὸ δὲ φθεῖρον λέγεσθαι κακόν*: cf. 433 a 28, b 8—10. Simpl. appears to have read *ᾗ τὰ τοιαῦτα*: 266, 15 *τὸ δὲ* **ᾗ τὰ τοιαῦτα** *πρόσκειται τῷ ἀγαθὰ ἢ κακά, διότι οὐδέποτε ἡ αἴσθησις τὸ ἀγαθὸν ὡς ἀγαθὸν ἢ τὸ κακὸν ὡς κακὸν κρίνει, ᾗ τὸ μὲν διώκει τὸ δὲ φεύγει, ἀλλὰ τὸ ἡδὺ ὡς ἀγαθὸν καὶ τὸ λυπηρὸν ὡς κακὸν τὸ μὲν διώκει τὸ δὲ φεύγει.*

a 12. καὶ ἡ φυγὴ...ἡ κατ' ἐνέργειαν. The qualification *ἡ κατ' ἐνέργειαν* must be supplied with *ἡ φυγή*. It may be objected to *ταὐτό*, the reading of codd. L T V adopted by Biehl, that it makes the text unnecessarily paradoxical: "actual aversion and actual desire, and not merely the faculties in question, are identical," though the paradox must of course be qualified by the customary

ἀλλὰ τὸ εἶναι ἄλλο. We had better acquiesce in τοῦτο (= τὸ ἐνεργεῖν), read by Bek. Trend. and Torst. Torstrik proposed conjecturally τὸ αὐτὸ τοῦτο here and would bracket ἢ κακὸν in the preceding line, where cod. L reads ᾗ τοιοῦτο in place of ᾗ τοιαῦτα. Then τὸ αὐτὸ τοῦτο, like τοῦτο, = τὸ ἐνεργεῖν τῇ αἰσθητικῇ μεσότητι. There seems no need to change ἢ before κατ' ἐνέργειαν with Trend. to ᾗ in order to bring out an antithesis between ᾗ τοιαῦτα and ᾗ κατ' ἐνέργειαν: quatenus res in universum vel bonae vel malae sunt (ᾗ τοιαῦτα, quod genus significat) animus vel gaudet vel dolet; quatenus in nos ipsos agunt (ᾗ κατ' ἐνέργειαν), vel concupiscimus vel fugimus (p. 425).

a 13 καὶ οὐχ ἕτερον...14 ἀλλὰ τὸ εἶναι ἄλλο, i.e. we do not desire the pleasant by one faculty and shun the painful by another. There is only one faculty of aversion and appetence, and this is identical with the sensitive faculty, though logically distinct. The same qualification has already been used for the identity of sense-organ and faculty 424 a 25, of actual sensation and actual sensible 425 b 27. Sensation and appetence ought no more to be confused than sensation and pleasure: cf. *Eth. Nic.* 1175 b 34 οὐ μὴν ἔοικέ γε ἡ ἡδονὴ διάνοια εἶναι οὐδ' αἴσθησις (ἄτοπον γάρ), ἀλλὰ διὰ τὸ μὴ χωρίζεσθαι φαίνεταί τισι ταὐτόν.

a 14 τῇ δὲ διανοητικῇ ψυχῇ...15 ὑπάρχει. This is repeated 432 a 9, with the significant addition πλὴν ἄνευ ὕλης. In 429 a 4 sq. we learned that imaginations persist and resemble sensations, διὰ τὸ ἐμμένειν (int. τὰς φαντασίας) καὶ ὁμοίας εἶναι ταῖς αἰσθήσεσι. The stone is outside me: when I perceive it, its εἶδος αἰσθητὸν is "in" my sensitive soul, but the change (κίνησις), which I call perception, has set up in me a distinct change, resulting in an image which, if certain circumstances are fulfilled, persists or is recalled, and then I am said not to perceive, but to think the stone (εἶδος νοητόν): and the presentation of an image is just as indispensable if the object of thought is not a particular but an universal. The case of the universal is referred to 417 b 22–25 and more fully investigated *Anal. Post.* II. 19, 100 a 15—b 3. See *De Mem.* 1, 450 a 1–7. The part taken by images in memory is explained in *De Mem.*, c. 1, the twofold function of the image as a mere thought and as recalling a former perception is explained there 451 a 1 ἔν τε τῇ ψυχῇ τὸ μὲν γίγνεται ὥσπερ νόημα μόνον, τὸ δ' ὡς ἐκεῖ ὅτι εἰκών, μνημόνευμα. The necessity of the mental image of a triangle in mathematical reasoning is enforced in the same chapter 449 b 31 καὶ νοεῖν οὐκ ἔστιν ἄνευ φαντάσματος· συμβαίνει γὰρ τὸ αὐτὸ πάθος ἐν τῷ νοεῖν ὅπερ καὶ ἐν τῷ διαγράφειν· ἐκεῖ τε γὰρ οὐθὲν προσχρώμενοι τῷ τὸ ποσὸν ὡρισμένον εἶναι τοῦ τριγώνου, ὅμως γράφομεν ὡρισμένον κατὰ τὸ ποσόν· καὶ ὁ νοῶν ὡσαύτως, κἂν μὴ ποσὸν νοῇ, τίθεται πρὸ ὀμμάτων ποσόν, νοεῖ δ' οὐχ ᾗ ποσόν· ἂν δ' ἡ φύσις ᾖ τῶν ποσῶν, ἀορίστων δέ, τίθεται μὲν ποσὸν ὡρισμένον, νοεῖ δ' ᾗ ποσὸν μόνον. **οἷον αἰσθήματα.** Cf. Them. 113, 14 H., 208, 13 Sp. πρόκειται ὥσπερ καὶ τὰ αἰσθήματα τῇ αἰσθήσει. In *Metaph.* 1010 b 32 sq. αἴσθημα is said to be τοῦ αἰσθανομένου πάθος. See *note* on 417 b 20.

a 15 ὅταν δὲ ἀγαθὸν...16 διώκει. The subject of the verbs φήσῃ, διώκει is probably ἡ διανοητικὴ ψυχὴ or τὸ διανοητικόν. With ἀγαθὸν ἢ κακὸν we must understand φαντασθὲν as contrasted with the ἡδὺ ἢ λυπηρὸν of a 9 *supra*, which is αἰσθητόν. Pursuit or avoidance, i.e. desire or aversion, comes within the sphere of νοῦς πρακτικὸς only in so far as the pursuit or avoidance can be resolved into affirmation or negation. Strictly all that a thinking faculty can do is to command (κελεύειν, ἐπιτάττειν, λέγειν 432 b 30 sqq.), i.e. to determine either an end or means to an end. The process indicated seems to be that of combining or separating, conjoining or dissociating the ideas of good and evil from some object present to the mind. So Them. 113, 16 H., 208, 15 Sp. ὅταν οὖν αὐτὰ συμπλέξῃ οἷον τὸ φάντασμα καὶ τὸ ἀγαθόν, ἢ τὸ φάντασμα καὶ τὸ κακόν,

τότε φεύγει ἢ διώκει καὶ ἔοικε καταφάσει ἡ δίωξις, ἀποφάσει δὲ ἡ φυγή. It must be remembered, however, that *φαντασία* may lead to action either on its own account, 429 a 5 sqq., or as an indispensable condition of the activity of the *νοῦς πρακτικός.*

a 16 διὸ οὐδέποτε...17 ἡ ψυχή. Because the thinking soul, being incapable of perception, has no sensations before it, it must have images to serve instead of sensations. That the image or pictorial presentation is indispensable to thought is often affirmed, e.g. 432 a 8, 13 sq. and, making allowance for the tentative tone of an introductory chapter, 403 a 8 *εἰ δ' ἐστὶ καὶ τοῦτο* [int. *τὸ νοεῖν*] *φαντασία τις ἢ μὴ ἄνευ φαντασίας, De Mem.* 1, 449 b 31.

a 17 ὥσπερ δὲ...20 πλείω. There is apparently no apodosis, the effect of *ὥσπερ* extending to the last co-ordinate sentence a 19 *τὸ δ' ἔσχατον* [int. *ἐστίν*] *ἕν κτέ.* Cf. *Ind. Ar.* 872 b 29 omittitur etiam interdum ea enunciatio demonstrativa, ad quam membrum relativum a part *ὥσπερ* incipiens referatur. See also 417 a 7 *καθάπερ*, 403 a 12, 409 a 32, *De Sensu* 3, 439 a 18 sqq. The communication of motion in sensation, for which cf. *De Insomn.* 2, 459 a 28—b 5, is traced from the air to the sense-organ and thence to some internal part, but the last point which this motion reaches is the organ of the central sense in or near the heart. It is true that, except for 426 b 15 sq., no mention was made of this organ in III., c. 2: but, having established the existence of the faculty, A. takes for granted *τὸ μόριον ἐν ᾧ ἐστί* (to which repeated reference is made in the *Parva Naturalia*) on the principle laid down 424 a 24—28. This organ may be styled *μεσότης* (cf. a 11 *supra*) on the same grounds as any special sense-organ: cf. 424 a 4 sqq. and see *note* on 431 a 10. The connexion of thought is not obvious, but the wording of 431 b 2 *τὰ μὲν οὖν εἴδη κτέ.* suggests a fresh start after a digression; and this makes against all proposals by means of transposition to bring a 14 *τῇ δὲ...17 ψυχῇ* into close juxtaposition with b 2 sqq. *infra.* If the point of comparison is unity in diversity, a 19, 28 sq., we should expect the parallel between images and sensibles to be more fully elaborated, whereas in 431 a 20—b 1 we seem still to be dealing with sensibles.

431 a 20—b 19. Here we must recall the explanation previously given (426 b 8 sqq.) of the operation by which judgment is passed upon a plurality of sensibles simultaneously presented. The judging faculty is one, *ἕν τι*, and one in the same sense as a point is one, i.e. its unity is not incompatible with a plurality of relations. The single judging faculty deals with heterogeneous sensibles, sweet and white, precisely as it deals with opposite sensibles, e.g. black and white, belonging to the same genus colour [§ 4]. To return to the thinking soul, which thinks the forms of objects as implicated in mental images: as the object of pursuit or avoidance is therein defined for it, so, when it is outside the range of sensation and dealing with mental images, we are thereby moved to action. Thus the mental picture of something to be avoided or pursued in its effect on the thinking soul may be compared with the beacon light in motion, the conventional signal of the enemy's approach [§ 5]. As the eye sees the one, so the mind sees the other, and the man is roused to calculate and deliberate, weighing the future against the present, and pursuit or avoidance follows upon the pronouncement of thought precisely as it does upon the pronouncement of sense that an object is pleasant or painful: and so in general where action is concerned. [But the intellect is not wholly practical.] Truth and falsehood, the object of the speculative intellect, are generically one with good and evil, the object of the practical intellect; but, while truth and falsehood have an absolute validity, good and evil are always good or evil for some person or some thing [§ 6]. Such abstractions as form the objects

of mathematics the mind thinks precisely as it might think the camused as concave in contradistinction to the camused as such, i.e. without separation from the substratum in which it is found. Though mathematical objects are not really separate from things, the mind conceives them as if they were [§ 7]. In fine, the mind, when it thinks, is actually the things which it thinks. The question whether the mind can think anything that is immaterial and unextended without being itself immaterial and unextended must for the present be postponed.

431 a 20. τίνι δ' ἐπικρίνει. The subject is left vague: it must be τὸ ἐπικρῖνον, whether ὁ ἄνθρωπος or ἡ ψυχή. A comparison of the statement of the same problem 426 b 14 (κρίνομεν, αἰσθανόμεθα) favours the former view. In any case, by τίνι and a 21 ἕν τι we are to understand what is technically known as ἡ κοινὴ αἴσθησις or (*De Sensu* 7, 449 a 17) τὸ αἰσθητικὸν πάντων.

a 21. πρότερον, viz. 426 b 12—427 a 14. **ὧδε,** "as follows." Nothing is added to the explanation before given, nor is it easy to see why it should be summarised here. Hence it is not strange that Them. in his paraphrase should have entirely passed over 431 a 17—b 1, or that Torstrik should have included the same passage in the *loci insiticii* which, according to him, interrupt the course of the argument. Neuhaeuser, however (*Aristoteles' Lehre*, p. 52), translates ὧδε "in einer andern Weise." If it be urged that in this passage stress is laid on the unity of the object, we may reply that throughout III., c. 2 a single faculty implies a single act of perception, and a single act of perception implies a single object. **ἔστι γὰρ ἕν τι.** Cf. 426 b 18 δεῖ ἑνί τινι ἄμφω [int. τὰ κρινόμενα αἰσθητὰ] δῆλα εἶναι, 426 b 20, 21 λέγει ἄρα τὸ αὐτό, b 22 οὐχ οἷόν τε κεχωρισμένοις κρίνειν τὰ κεχωρισμένα, b 30 τὸ αὐτὸ ᾗ ἀδιαίρετον, 427 a 2 ἀριθμῷ ἀδιαίρετον καὶ ἀχώριστον, 427 a 11.

a 22. οὕτω δὲ καὶ ὡς ὅρος. Our authorities vary very considerably: see critical *notes*. Codd. L V omit καὶ ὡς ὅρος and give a shortened text οὕτω δὲ καὶ ταῦτα ἐν τῷ ἀνάλογον κτέ., but the words of Simpl. (271, 6) ἔστι γάρ, φησι καὶ αὐτός, ἕν τι αὐτὸ τὸ κρῖνον ὥσπερ καὶ ὁ ὅρος and Philop. (560, 21) μία οὖσα, φησίν, ὥσπερ ὅρος are conclusive against the omission. Cod. T, on the other hand, has οὕτω δὲ ἡ στιγμὴ καὶ ὁ ὅρος, which led Torstrik to conjecture that our text is defective rather than redundant here. It need not surprise us that what is successively called στιγμή, σημεῖον, πέρας in III., c. 2 should here be designated ὅρος. It might even have been called διαίρεσις, 430 b 20. Such a boundary point implies at least two things which it separates.

a 22 καὶ ταῦτα...23 πρὸς ἄλληλα. All attempts to make anything of the traditional text τῷ ἀριθμῷ ὂν ἔχει having been fruitless (see Neuhaeuser, p. 53 sqq.), a new chapter in the interpretation of this obscure passage opened with the adoption by Freudenthal and Neuhaeuser of the reading ὃν for ὂν on the authority of Simplicius and the old Latin Translation. If it were certain that the subject of a 23 ἔχει must be what is known as ἡ κοινὴ αἴσθησις, such a result could be more easily reached by extruding ὂν or ὃν altogether from the text, or by transposing a 22 καὶ ταῦτα...23 τῷ ἀριθμῷ to precede a 22 οὕτω δέ. In the latter case we should get ἔστι γὰρ ἕν τι· καὶ ταῦτα [int. τὸ γλυκὺ καὶ τὸ θερμὸν] ἐν τῷ ἀνάλογον ἢ τῷ ἀριθμῷ· οὕτω δὲ καὶ ὡς ὅρος ὃν ἔχει πρὸς ἑκάτερον ὡς ἐκεῖνα πρὸς ἄλληλα, a statement so plain that confusion or perplexity would seem impossible. The attitude of the central sense to two heterogeneous sensibles which it discriminates would then be declared to be the same as the attitude of every special sense to the ἐναντία which come under its ken, as laid down 424 a 6 γίνεται γὰρ πρὸς ἑκάτερον αὐτῶν θάτερον τῶν ἄκρων: and this would accord perfectly with the next sentence in which white and black emerge. Or, if ὃν be

deleted, the transposition is unnecessary, provided that a 22 καὶ ταῦτα...23 τῷ ἀριθμῷ is treated as parenthetical and enclosed in round brackets. If, however, we decline to evade the difficulties before us, it certainly seems to me that ταῦτα must be the nominative to ἔχει πρὸς ἑκάτερον, that it is a mistake to supply a second ἑκάτερον before πρὸς ἑκάτερον to balance ἐκεῖνα πρὸς ἄλληλα, and that a 22 ἐν τῷ ἀνάλογον...a 23 ὂν is an attributive clause, in which ὂν has been substituted for ὄντα through the influence of the predicate ἕν. Attraction to the gender of the predicate is common, to the number rare, but there are instances, e.g. 422 b 19 πότερον πλείους εἰσὶν ἢ μία. Here ἡ ἁφὴ must be the subject and εἰσὶν is attracted to the number of πλείους. Cf. *Metaph.* 1048 a 8 αὗται μὲν γὰρ πᾶσαι μία ἑνὸς ποιητική,...ὥστε ποιήσει, *De Sensu* 7, 447 b 26 τὸ λευκὸν καὶ τὸ μέλαν, ἕτερον τῷ εἴδει ὄν, Plato, *Protag.* 340 A ᾗ τό τε βούλεσθαι καὶ ἐπιθυμεῖν διαιρεῖς ὡς οὐ ταὐτὸν ὄν, καὶ ἃ νῦν δὴ εἶπες πολλά τε καὶ καλά. For attractions of gender cf. 404 a 25 sq., 419 b 10 πληγὴ γάρ ἐστιν ἡ ποιοῦσα. A better instance is *Metaph.* 1002 a 2 τὸ δὲ σῶμα...μόνον ὑπομένει, ὡς ὄν τι καὶ οὐσία τις οὖσα. Thus understood, the sentence affirms, not that the central sense is a μεσότης, related to each of its heterogeneous objects as these heterogeneous objects are related to each other, but that this proposition holds of the object of the central sense, viz. the two heterogeneous sensibles when they have coalesced into unity of one sort or another. It means then that the single object (ταῦτα) formed by the unity of the two sensibles stands related to each sensible in turn (πρὸς ἑκάτερον) as these sensibles in isolation (ἐκεῖνα) stand to one another. I have adopted the reading ἢ τῷ ἀριθμῷ because I take it that the type of unity differs according as the qualities compared are in the same or in different objects. If they are in different objects, the only unity they can have is the unity of analogy, because sweet is the positive extreme of the genus flavour, as hot is the positive extreme of the genus temperature. When things are so related that as $A : B :: C : D$, A and C are said to be by proportion or analogy one, and similarly B and D are by proportion or analogy one: there is an identity of relation: cf. *Eth. Nic.* 1131 a 31 ἡ γὰρ ἀναλογία ἰσότης ἐστὶ λόγων, *Metaph.* 1016 b 34 κατ' ἀναλογίαν δὲ [int. ἕν] ὅσα ἔχει ὡς ἄλλο πρὸς ἄλλο with Alex. Aphr. *ad loc.* 369, 24 ἀναλογίᾳ μὲν γὰρ ἕν, ὡς πηγὴ πρὸς ποταμόν, οὕτω καρδία πρὸς τὸ ζῷον· οὐ μὴν καὶ ὁμογενῆ ταῦτα, πηγὴ καὶ καρδία ἢ ποταμὸς καὶ ζῷον. Cf. *Poet.* 1457 b 16 τὸ δὲ ἀνάλογον λέγω, ὅταν ὁμοίως ἔχῃ τὸ δεύτερον πρὸς τὸ πρῶτον καὶ τὸ τέταρτον πρὸς τὸ τρίτον· ἐρεῖ γὰρ ἀντὶ τοῦ δευτέρου τὸ τέταρτον ἢ ἀντὶ τοῦ τετάρτου τὸ δεύτερον, which Butcher translates: "Analogy or proportion is when the second term is to the first as the fourth to the third. We may then use the fourth for the second, or the second for the fourth." Here it is plain that the second and fourth are by analogy or proportion one and similarly the first term and the third are by analogy or proportion one. If the two qualities belong to the same external thing, they will be κατὰ συμβεβηκὸς numerically one, exactly as "musical" and "just" are numerically one because they happen to be qualities of Coriscus: *Metaph.* 1015 b 16—36. (I may add that the MS. authority for καὶ in place of ἢ before τῷ ἀριθμῷ is cod. T only, not, as reported by Hayduck, *crit. app.* ad Philop. 560, 23, codd. E T. From 430 a 24 to 431 b 16 we are without the testimony of cod. E.) In the result so obtained there is nothing, I believe, to conflict with the teaching of the treatise. We have been told that ψόφησις = ἄκουσις and that both reside ἐν τῷ πάσχοντι, i.e. ἐν τῷ αἰσθητικῷ, and what has been established for each and all of the five senses must hold of the single faculty, τὸ αἰσθητικὸν πάντων, in which they are all merged. In the act of perception, then, the central sense and its object, which is a pair of heterogeneous sensibles, are one and the same, though

logically distinct. Moreover, our sentence itself proves (1) that the object, the pair of heterogeneous sensibles, is under the given conditions a unity, (2) that the object is related in one way to one, in another way to the other of the two heterogeneous sensibles of which it consists. That is, sweet-hot is sweet as compared with hot and hot as compared with sweet, so that we have here that plurality of relations which makes the same piece of road diverse, because it can be regarded now as uphill, now as downhill. As to (1), the fact that the pair of heterogeneous sensibles is under the given conditions a unity seems to be confirmed by *De Sensu* 7, 449 a 5 *εἰ δὲ δὴ ἄλλῳ μὲν γλυκέος ἄλλῳ δὲ λευκοῦ αἰσθάνεται ἡ ψυχὴ μέρει, ἤτοι τὸ ἐκ τούτων ἕν τι ἐστὶν ἢ οὐχ ἕν. ἀλλ' ἀνάγκη ἕν· ἓν γάρ τι τὸ αἰσθητικόν ἐστι μέρος. τίνος οὖν ἐκεῖνο ἑνός; οὐδὲν γὰρ ἐκ τούτων ἕν.* A. desiderates unity in the object, but is unable to find it, presumably because sweet and white do not coalesce in the same way into a *μεῖγμα*, as e.g. the two notes blended in an octave, which, according to *De Sensu* 7, 447 a 17 sqq., b 9—13, are simultaneously perceived by the ear because they have coalesced into unity. Yet the conclusion of *De Sensu* is not incompatible with the interpretation I propose of our present passage, since in 449 a 5 sqq. the denial of unity applies only to the hypothesis there under consideration, viz. the simultaneous apprehension of sweet by one part, and white by another part, of the soul, an hypothesis which A. is there refuting, as he again refutes it *De A.* 426 b 17. Even in *De Sensu* 447 b 1 an accidental unity of heterogeneous sensibles is conceded: *οὐκ ἔστι δ' ἐκ λευκοῦ καὶ ὀξέος ἓν γενέσθαι* **ἀλλ' ἢ κατὰ συμβεβηκός.** This I take to be the meaning of *ἢ τῷ ἀριθμῷ* [int. *ἕν*], 431 a 22.

Neuhaeuser explains *ταῦτα* as the sensations, *ἐκεῖνα* as the objective qualities outside of sensation. He is, therefore, forced to understand <*ἑκάτερον*> *πρὸς ἑκάτερον*. M. Rodier virtually does the same: though he explains *ἔχει* by "contains" and makes the subject of the verb the central sense, with which *ἓν τῷ ἀνάλογον...ὄν* is in agreement, yet it is clear from his translation ("étant un par analogie et numériquement, il a en lui ces qualités diverses, dans le même rapport, l'une vis-à-vis de l'autre, que celles-ci sont entre elles dans la réalité") that he supposes the accusative after *ἔχει* to be something like this: *ταῦτα ἑκάτερον πρὸς ἑκάτερον ἔχοντα ὡς...ἄλληλα.* Simplicius, I believe, made no stop after *ὅρος*, for he certainly says that the two sensible qualities are one, not only with each other but with the knowing faculty (271, 21 sqq.).

a 24 τί γὰρ διαφέρει...25 οἷον λευκὸν καὶ μέλαν; This question, introduced abruptly, implies that the central sense is necessary wherever two sensibles are compared, whether they are heterogeneous, like sweet and warm, or the opposite qualities of the same genus, like white and black. Some such connexion as this may be imagined: "Not only in the case stated, but in every case; for etc." The point is worth urging, for some of those who have handled this perplexing passage trust rashly to the provisional statement of 426 b 10, and erroneously suppose that white and black are discriminated from each other by the single special sense of sight. Philop. puts the case the other way: 561, 4 *μὴ ἀπόρει, φησίν, πῶς τὰ ὁμογενῆ οἶδεν ἡ κατὰ μέρος αἴσθησις, εἴπερ οὐκ ἀπορεῖς πῶς τὰ ἀνομογενῆ οἶδεν ἡ κοινὴ αἴσθησις.* He, too, thinks that sight by itself is capable of pronouncing a judgment of difference or identity. Neuhaeuser also, p. 59, takes the meaning to be that whether we investigate the discrimination of heterogeneous qualities by the central sense or of opposite qualities by a single sense does not affect the problem: as if the discrimination of opposite qualities by a single sense 426 b 10 sqq. had not to be qualified by the whole subsequent discussion, particularly the remarks of 426 b 29—427 a 1, where the argument applies to any special sense as much as to the central sense. Cf. *De Sensu*, c. 7,

where the impossibility of two sensations occurring simultaneously is first established for a single sense (448 a 1—13) and then used to prove *a fortiori* a similar impossibility where the two sensibles are perceived by different senses (448 a 13—19). Upon the principles laid down 426 b 12—427 a 14 a judgment of difference is not possible, unless the two sensibles are simultaneously presented to the same judging faculty. But each special sense judges its objects successively, not simultaneously, and even in the extreme case when that object is a mixture of two or more components *ἐξ ὧν ἕν τι γίγνεται*, it is still a single object which the single sense judges, an object numerically one, *De Sensu* 7, 447 b 9—13.

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of such an assumption: 272, 18 *ἐν δὲ τῇ ἀναλογίᾳ καὶ τὸ ἐναλλὰξ χώραν ἔχει, καὶ ἔσται ὡς τὸ Α πρὸς τὸ Γ, οὕτω τὸ Β πρὸς τὸ Δ. τοῦτο δὲ παρείληπται, ἵνα μὴ μόνον ἐπὶ τῶν ἐναντίων, ἀλλ' ἐπὶ τῶν ὁμογενῶν* [immo *ἀνομογενῶν*] *τὸ ἓν γινόμενον νοῶμεν, ὅταν, ὡς εἴρηται, ἓν τὸ γινῶσκον ἅμα ᾖ τὰ διάφορα. τότε γὰρ καὶ τὸ λευκὸν καὶ τὸ γλυκὺ ἓν γίνεται καὶ τὸ μέλαν καὶ τὸ πικρόν, ἅπερ οὐκ ἐναντία μέν, ὁμογενῆ* [immo *ἀνομογενῆ*] *δὲ ὅμως καὶ αὐτὰ κατά τι πορρώτερον γένος τοῦ χρώματος. ὁ τοίνυν ἐνδοὺς πρὸς τὸ ὁπωσοῦν ἀλλήλοις ἓν γίνεσθαι τὰ ΑΒ ἢ τὰ ΓΔ καὶ θάτερα δώσει, καὶ πρός γε τὰ ἐναλλάξ.* Philop. (561, 10 sqq.) understood ΓΔ of the *λόγοι* or *εἴδη* of black and white: more precisely (since he desired to establish a close connexion with what has preceded and what will follow about *διάνοια πρακτική*, 555, 7 sqq.) the *νοητὸν εἶδος* of each, which is presented to the same single judging faculty, *νοῦς*, as the sensible qualities white and black are presented to the single judging faculty, the central sense.

Neuhaeuser, as we have seen, regards *ταῦτα* and *ἐκεῖνα* a 22 sq. *supra* as meaning respectively the sensations before the central sense and the objective qualities giving rise to those sensations. This distinction, he thinks, is here reproduced, AB answering to *ἐκεῖνα*, ΓΔ to *ταῦτα*, i.e. to the sensations, here of black and white. It is these, and not the objective qualities, which, as he contends, are present to the judging faculty. Hence Neuhaeuser retains the words a 26 *ὡς ἐκεῖνα πρὸς ἄλληλα* (repeated from a 23), which Christ, Freudenthal, Baeumker and Biehl rejected as spurious. According to Neuhaeuser, A. admits that a single sense is competent to discriminate the contraries in its own genus: black and white are judged by the single sense sight. If ΓΔ, the two sensations to be judged, belong to the same sense, they will be related as the corresponding qualities, so far as these latter belong to one and the same object. That is, they will be *ἐν τῷ ὑποκειμένῳ*, though logically distinct. And the same relation will hold between the sense and its object (*κἀκεῖνο ὁμοίως*). At a 29 *ὁ δ' αὐτὸς λόγος* the proof is resumed. What has been established for a single sense and its object can similarly be demonstrated for the central sense and its object, the pair of heterogeneous sensations. The point of the illustration, then, is that, as contrary sensations, white and black, stand related to one of the special senses, sight, so heterogeneous sensations, white and sweet, are related to the central sense. A. seeks to prove that from the numerical identity joined with logical distinctness implied in the former case can be deduced the same numerical identity joined with logical distinctness for the latter case, both as between the heterogeneous sensations themselves and as between the heterogeneous sensations and the central sense. The analogy between the union of different or even opposite qualities in the same external thing and the union of different or even opposite relations of the one judging faculty, which is nevertheless numerically identical, is used, as Neuhaeuser points out, by A. himself *De Sensu* 7, 449 a 13 *ἢ ὥσπερ ἐπὶ τῶν πραγμάτων αὐτῶν ἐνδέχεται, οὕτως καὶ ἐπὶ τῆς ψυχῆς. τὸ γὰρ αὐτὸ καὶ ἓν ἀριθμῷ λευκὸν καὶ γλυκύ ἐστι, καὶ ἄλλα πολλά, εἰ μὴ χωριστὰ τὰ πάθη ἀλλήλων, ἀλλὰ τὸ εἶναι ἕτερον ἑκάστῳ. ὁμοίως τοίνυν θετέον καὶ ἐπὶ τῆς ψυχῆς τὸ αὐτὸ καὶ ἓν εἶναι ἀριθμῷ τὸ αἰσθητικὸν πάντων, τῷ μέντοι εἶναι ἕτερον καὶ ἕτερον τῶν μὲν γένει τῶν δὲ εἴδει.* But, as I have tried to show above, it seems a mistake to attribute to sight or any of the special senses the power of discrimination between homogeneous objects simultaneously present, except in so far as a special sense is employed as an instrument by the central sense: cf. *De Sensu* 7, 449 a 8 *ἀνάγκη ἄρα ἕν τι εἶναι τῆς ψυχῆς, ᾧ ἅπαντα αἰσθάνεται, καθάπερ εἴρηται πρότερον, ἄλλο δὲ γένος δι' ἄλλου*, i.e. *ὁρατὸν διὰ τῆς ὄψεως, ἀκουστὸν διὰ τῆς ἀκοῆς κτέ.* Sight, as a special sense, apprehends white and black successively: *sensus communis*, employing sight as

its instrument, apprehends white and black simultaneously. On the other hand, if Simpl. has the right interpretation, it is surprising that A., whose real point, according to Simpl., is to establish the proposition for *κἀκεῖνο ὁμοίως* (*τὸ ἐναλλάξ*), i.e. for ΑΓ or ΒΔ, should be at the pains to establish it first for ΓΔ, a conclusion which does not advance us beyond the point from which we started, the pair of contraries ΓΔ being in all respects similar to the pair of contraries AB. I suspect Simpl. is no more right about *ὥστε καὶ ἐναλλάξ* than about *τὰ ὁμογενῆ*, his *lectio falsa* at 431 a 24. He just assumes that, being simultaneously apprehended, A and B are one: 272, 15 *εἰ οὖν τὰ AB ἓν πρὸς ἄλληλα γίνεται, ὅταν ἅμα γινώσκηται, καὶ τὰ ΓΔ ὁμοίως ἓν γενήσεται ἢ ἀριθμῷ ἢ ἀναλογίᾳ, ἀριθμῷ μὲν διὰ τὸ ἑνὶ καὶ τῷ αὐτῷ γνωρίζεσθαι, ἀναλογίᾳ δὲ διὰ τὸ κατὰ διαφόρους λόγους μηδὲν μᾶλλον θάτερον ἢ ἧττον. ἐν δὲ τῇ ἀναλογίᾳ καὶ τὸ ἐναλλὰξ χώραν ἔχει κτέ.* These remarks precede the introduction of *alternando*. He appears to understand by *ὥσπερ καὶ τὰ AB* "as we know A and B to be," whereas I take these words to be a part of the inference: "and so will AB be related." Again, if ΓΔ are *αἰσθητά*, not *αἰσθήματα*, the single subject to which they belong ought to be the external thing rather than the central sense. Neuhaeuser indeed, p. 60, explains *κἀκεῖνο ὁμοίως* as referring equally to the thing in which the sensible qualities inhere and the sense or sentient subject in which the sensations inhere: "jenes eine Princip, der Sinn und das Object." Lastly, Simpl. states (272, 28) that at *ὁ αὐτὸς λόγος* A. resumes *ὅπερ διὰ τοῦ ἐναλλὰξ ἐνεδείξατο.* If so, and if the *alternando* has no purpose in what precedes, why was it gratuitously anticipated?

a 27. ὥστε καὶ ἐναλλάξ, int. *ἀνάλογον ἔσται.* Cf. *Eth. Nic.* 1131 b 5 *ἔσται ἄρα ὡς ὁ α ὅρος πρὸς τὸν β, οὕτως ὁ γ πρὸς τὸν δ, καὶ ἐναλλὰξ ἄρα, ὡς ὁ α πρὸς τὸν γ, ὁ β πρὸς τὸν δ.* For the omission of a verb after *ὥστε καὶ* cf. *ib.* 1131 b 7 *ὥστε καὶ τὸ ὅλον πρὸς τὸ ὅλον*, *De Part. An.* I. 3, 642 b 35 *ἀναγκαῖον γὰρ τῶν καθ' ἕκαστον ὑπάρχειν τινὶ τῶν διαφορῶν ἑκάστην, ὥστε καὶ τὴν ἀντικειμένην* and the citations in *note* on 406 b 1. **τὰ ΓΔ**, an abbreviation for *τὸ Γ καὶ τὸ Δ.* Sometimes the singular article *τὸ* is prefixed in the same sense: cf. *Phys.* VIII. 5, 258 a 9—18 in the light of 258 a 1—5.

a 29. κἀκεῖνο. There is a strong temptation to adopt the conjecture *κἀκεῖνα* and make "they also" recapitulate, referring to ΓΔ, the subject of a 28 *ἕξει.* Or this might still be possible with the singular *κἀκεῖνο*, since ΓΔ form a unity. I have translated it differently, referring it to the single subject, in which Γ and Δ *ex hypothesi* inhere. **ὁ δ' αὐτὸς λόγος.** The same argument will apply if we take heterogeneous, instead of opposite, sensibles. See *note* on 431 a 25, *ἔστω δή*, *supra.*

431 b 2 τὰ μὲν οὖν εἴδη...12 καὶ τινί. A. now returns to *νοῦς πρακτικός* or (a 14) *ἡ διανοητικὴ ψυχή* and the part it plays in moving us to action, alike (1) in present sensation and (2) apart from sensation, when we are dealing only with the images and ideas in the mind. The first case is illustrated by the beacon fire, the second case is stated in general terms b 6—9 *ὁτὲ δὲ...διώκει.* When we see the signal of an enemy's approach we are moved to action, at other times the mere imagination or idea in the mind is sufficient to prompt pursuit or avoidance after calculation and deliberation. The general sense is clear, though there are difficulties in detail.

b 2. τὸ νοητικόν. Cf. Simpl. 273, 26 *δηλαδὴ τὸ πρακτικόν· τοῦτο γὰρ τὸ διῶκον ἢ φεῦγον.* A. may have this chiefly in mind here, but, as the *φάντασμα* is just as indispensable for *νοῦς θεωρητικός*, 432 a 8, the statement should be taken quite generally. Cf. *supra* 431 a 14 sq. **ἐν τοῖς φαντάσμασι νοεῖ.** The sense conveyed by *ἐν* here and 432 a 4 sq. hardly differs from that of *οὐκ ἄνευ*

431 a 17: cf. 432 a 8, 13. The statement is repeated here in order to draw the inference that rational desire has a freer range than that *ἐπιθυμία* which is prompted by present sensation to pursue what is pleasant.

b 3 καὶ ὡς ἐν ἐκείνοις...5 κινεῖται. The main purpose is to bring out the difference between *νοῦς πρακτικὸς* and *αἴσθησις*, which is a consequence of the employment of *φαντάσματα*. *Νοῦς πρακτικὸς* not only operates under the stimulus of actual sensation, of which an illustration is given by the fire-signal; but it can also, as above explained, operate through *φαντάσματα* apart from and independently of present sensation (see 431 a 14, 428 b 27), and this is illustrated by the process of calculation and deliberation, when only images are before the mind, b 6 *ὁτὲ δὲ*...9 *διώκει*. The details are obscure, e.g. *ἐν ἐκείνοις*, *αὐτῷ* and the subject to *κινεῖται*. To take the last first. In the illustration the subject of *γνωρίζει*, being qualified by *αἰσθανόμενος* and *ὁρῶν*, must be the individual man: cf. 408 b 13. This will also suit b 7, 8 *λογίζεται, βουλεύεται, εἴπῃ*. We can hardly be wrong, then, in taking the same subject for *κινεῖται*, which, if it means *ὀρέγεται*, includes both *φεύγει* and *διώκει* of b 9. In spite, then, of the opening sentence b 2 *τὸ νοητικὸν...νοεῖ*, throughout this section A. leaves the faculties for the concrete possessor, the subject or individual who perceives, deliberates and desires. It is true, *τὸ νοητικὸν* might be the subject of *κινεῖται*: cf. *Metaph.* 1072 a 30 *νοῦς δὲ ὑπὸ τοῦ νοητοῦ κινεῖται*. But, if we go back to faculties, it must be *τὸ ὀρεκτικόν*, as we shall see 433 b 17 *κινεῖται γὰρ τὸ κινούμενον ᾗ ὀρέγεται*, b 27 *ᾗ ὀρεκτικὸν τὸ ζῷον, ταύτῃ ἑαυτοῦ κινητικόν*. But the expression here is rather parallel to 433 b 18 *τὸ δὲ κινούμενον τὸ ζῷον*: cf. 433 a 24. As for *αὐτῷ*, although it is very natural to take it as *τῷ νοητικῷ* and *ὥρισται* as recalling 431 a 15 *ὅταν δὲ*...16 *διώκει*, it is just as easy to refer it to the individual man, and the decision must lie with *ἐν ἐκείνοις*. From *καὶ ἐκτὸς τῆς αἰσθήσεως* it may be inferred that b 3 *ὡς...φευκτὸν* has to do with sensation: compare the illustration b 5 sq. This would make it impossible that *ἐν ἐκείνοις* should mean *ἐν τοῖς φαντάσμασιν*.

b 4. καὶ ἐκτὸς τῆς αἰσθήσεως. I take *καὶ* as "even" or "also." Because the mind distinctly cognises good to pursue and evil to avoid among the *νοητὰ* implicated in the imaginations of sense, even in the absence of actual sensation we are moved to act. If *ὡς...καὶ* be taken to correspond to each other, "as...so also," the clause *ὡς...φευκτὸν* will refer exclusively to the case when there is an actual sensation, and *ἐν ἐκείνοις* must be taken to mean *ἐν τοῖς αἰσθητοῖς*: cf. below b 8 *ὅταν εἴπῃ ὡς ἐκεῖ τὸ ἡδὺ ἢ λυπηρόν*. So Simpl. 273, 35 *ἐν ἐκείνοις λέγων τοῖς αἰσθητοῖς, καθάπερ αὐτὸς σαφῶς ἑρμηνεύει ἀντιδιαιρῶν αὐτοῖς τὰ ἐκτὸς τῆς αἰσθήσεως, ἅπερ ἐστὶ τὰ φανταστά*. Hammond in his translation (p. 124) appears to join *καὶ ἐκτὸς τῆς αἰσθήσεως* with *ὡς ὥρισται*, and not with *κινεῖται*, understanding *ἐν ἐκείνοις* to mean *ἐν τοῖς φαντάσμασιν*. So taken, the words become quite pointless.

b 4. ἐπὶ τῶν φαντασμάτων ᾖ. Torstrik supplies *τὸ διωκτὸν καὶ τὸ φευκτὸν* as the subject: as remarked above, I prefer *ὁ νοῶν*. *Εἶναι ἐπὶ* c. gen. means to attend to, to be occupied with, as e.g. in Demosthenes *ἐπὶ τῶν πραγμάτων, ἐπὶ τοῦ πολεμεῖν εἶναι*.

b 5. κινεῖται, i.e. is moved to action: apparently meant to include *φεύγει ἢ διώκει* under one expression, as in 433 b 17. Cf. 433 b 27 sq. and 433 a 24 sq. That *διανοεῖσθαι* is in popular view a *κίνησις* was admitted 408 b 3 sq., 6. Simpl. 273, 38 *τουτέστιν ἐγείρεται εἰς λογισμὸν καὶ βουλὴν τὴν περὶ αὐτὸν* seems to me a little too precise.

b 5 οἷον αἰσθανόμενος...6 πολέμιος. This illustrates the case of present sensation: "if we see something alarming—the beacon torch in motion, for

instance—we are immediately moved to action" (Bywater). Here νοῦς plays its part. Cf. Simpl. 274, 10 καὶ γνωρίζει ὁ νοῶν συντιθεὶς τὸ μὲν ἀπὸ τοῦ αἰσθητοῦ, τὸ δὲ ἀπὸ τοῦ περὶ ταῦτα λόγου ἀναφέρων εἰς τὸ τὸν φρυκτὸν παρουσίας πολεμίων εἶναι σύμβολον. **τὸν φρυκτόν.** The corruption to φευκτὸν in five of our MSS. can be traced in Them.: see Heinze's critical apparatus on Them. 114, 1. By a military convention, a beacon fire or torch, if stationary, signified the approach of friends, while torches in motion were a warning of the approach of the enemy: Thuc. II. 94, III. 22, 80, VIII. 102. Cf. the Scholiast on Thuc. II. 94 φρυκτοί εἰσι λαμπάδες τινὲς ἀπὸ ξύλων γιγνόμεναι, ἅστινας βαστάζοντες ἄνωθεν τῶν τειχῶν ἐσήμαινον τοῖς πλησιοχώροις ἢ τοῖς συμμάχοις ὅτ' ἂν τινας ἑώρων πολεμίους ἐπιόντας, ὡς δεῖ προφυλάξασθαι. οὐ μόνον δὲ ἐπὶ τῶν πολεμίων τοῦτο ἐποίουν, ἀλλὰ καὶ ἐπὶ φίλων· ὅτ' ἂν ἑώρων βοήθειαν αὐτοῖς ἐρχομένην, ἐσήμαινον πάλιν διὰ τῶν φρυκτῶν ὡς οὐ δεῖ θορυβεῖσθαι. καὶ ὅτ' ἂν μὲν φίλους ἐδήλουν, ἐβάσταζον τοὺς φρυκτοὺς ἠρεμοῦντες· ὅτ' ἂν δὲ πολεμίους, ἐκίνουν τοὺς φρυκτούς.

b 5. [τῇ κοινῇ], int. αἰσθήσει: but it is impossible to reconcile this with the conclusion of III., c. 1, viz. that there is no αἰσθητήριον for τὰ κοινὰ distinct from, and additional to, the ordinary five senses. It is by sight alone, τῇ ὄψει, and not by the common meeting place of all the five senses, that the beacon in motion is perceived in the case before us. Simplicius was aware of the difficulty and proposed to meet it by transposing γνωρίζει to precede ὅτι πολέμιος and punctuating after κινούμενον and before γνωρίζει thus transposed (274, 14—17). The sentence then reads τῇ κοινῇ ὁρῶν κινούμενον, γνωρίζει ὅτι πολέμιος. Thus Simpl. joins τῇ κοινῇ closely with ὁρῶν κινούμενον, not with γνωρίζει, and explains τῇ κοινῇ as τῇ τῶν κοινῶν (274, 6 sq.). Torstrik made a decided improvement upon this lame explanation by conjecturing κινήσει for κοινῇ: cf. his proposal of κοινῇ in 425 a 17 in place of the κινήσει of the MSS. The pleonasm τῇ κινήσει ὁρῶν κινούμενον is not in itself decisive against this conjecture. Bywater's proposal (*Journ. of Phil.* XVII. p. 61) to excise τῇ κοινῇ as a marginal gloss is the most satisfactory solution of the difficulty. As he says:—"The antithesis here is simply between what we see (ὁρῶν) and what we only *as it were* see (ὥσπερ ὁρῶν), i.e. imagine; and it is weakened or rather utterly spoilt by the addition of a superfluity like τῇ κοινῇ—which seems due to some annotator who was aware that κίνησις was one of the κοινὰ αἰσθητά, but did not understand the Aristotelian theory as to how we know them."

b 6 ὁτὲ δὲ...8 παρόντα. Here we pass ἐκτὸς τῆς αἰσθήσεως to the cases where the mind is taken up with its own ideas and imaginations, employing them in the deliberation which precedes action. As we shall see 433 b 29, 434 a 7, imagination so employed by rational beings is termed λογιστικὴ or βουλευτικὴ φαντασία, and the procedure of weighing the future against the present is further elucidated 433 b 5—10, 434 a 5—10. The accusative τὰ μέλλοντα b 8 is governed by λογίζεται, to which καὶ βουλεύεται is attached by a sort of afterthought. Cf. Plato, *Theaet.* 186 A ἀναλογιζομένη ἐν ἑαυτῇ τὰ γεγονότα καὶ τὰ παρόντα πρὸς τὰ μέλλοντα.

b 8 καὶ ὅταν εἴπῃ...9 φεύγει ἢ διώκει. Deliberation ends in a decision or pronouncement, which takes the form of a judgment or proposition, either of which can be denoted by εἴπῃ: cf. λέγει 426 b 20, 21, 22, φήσῃ ἢ ἀποφήσῃ 431 a 16. The question arises whether ἐκεῖ and ἐνταῦθα are antithetical. They can hardly be so in the way Torstrik supposes, viz. ἐκεῖ = in the future, ἐνταῦθα = in the present: et si dicit futurum esse iucundum quid vel triste, iam nunc fugit vel persequitur. Nor is Wallace's account more satisfactory, viz. that ἐκεῖ = in the speculative sphere, ἐνταῦθα = in the practical sphere. If an antithesis must

be found, it would be better to make ὡς ἐκεῖ refer to αἰσθητά, the expression seeming to recall b 3 ὡς ἐν ἐκείνοις...φευκτόν. But, if so, the sentence is extraordinarily brief and elliptical: ὅταν εἴπῃ [int. τὸ ἀγαθὸν ἢ κακὸν] ὡς ἐκεῖ [int. εἶπε] τὸ ἡδὺ ἢ λυπηρόν, the word ἐνταῦθα implying τὸ ἀγαθὸν ἢ κακὸν to balance τὸ ἡδὺ ἢ λυπηρόν. Thus ὡς is comparative and is not used to introduce a clause in indirect speech. Some indeed take εἴπῃ ὡς ἐκεῖ τὸ ἡδὺ ἢ λυπηρὸν to mean "pronounces that there lies pleasure or pain," as if the clause with ὡς contained the substance of the pronouncement. To this view Torstrik objects that A. of all men would be least likely to make rational action depend solely upon pleasure and pain. It may be urged that pleasure and pain are the ordinary motives of human action and that in *Eth. Nic.* VII. and X. the highest good is almost, if not altogether, identified with pleasure. But, granting all this, why should A. assign to rational desire the same ὀρεκτὸν as to irrational desire or ἐπιθυμία, whether in man or brute, if all along his object is, as we have shown, to distinguish νοῦς πρακτικὸς from αἴσθησις? And why should he do this when a moment before he has been describing the calculation and balancing of the future against the present, which is only possible for creatures who have a perception of time and are swayed by the conflicting impulses of λόγος and ἐπιθυμία? Cf. 433 b 5 sqq.

b 10. καὶ ὅλως ἐν πράξει. With these words repeat φεύγει ἢ διώκει. There will then be no need to conjecture with Trend. οὕτως for ὅλως. Cf. Simpl. 275, 4 πράττει δὲ ἢ τοῦ ἀγαθοῦ ἐπιδιώκων μετάληψιν ἢ τὸ κακὸν ἀποδιοπομπούμενος. In spite of this sensible note, Simplicius would seem to have missed the construction and supplied ἐστὶν with ἐν πράξει: 275, 3 καὶ καθόλου πράττει τι. τοῦτο γὰρ δηλοῖ τὸ ὅλως ἐν πράξει. Even then we are not justified in translating with M. Rodier: "et d'une manière générale, il passe à la pratique." Cf. *Metaph.* 1078 a 31 τὸ ἀγαθὸν καὶ τὸ καλὸν ἕτερον (τὸ μὲν γὰρ αἰεὶ ἐν πράξει, τὸ δὲ καλὸν καὶ ἐν τοῖς ἀκινήτοις).

b 10 καὶ τὸ ἄνευ δὲ πράξεως...12 τινί. Intellectus practicus non est penitus diversus ab intellectu theoretico: nam verum et bonum in eadem συστοιχίᾳ continentur, item falsum et malum: differunt ita ut bonum semper referatur ad aliquem vel ad aliquid cui bonum est, verum non item (Torst.). The truth and falsehood which are contemplated independently of action must belong to νοῦς θεωρητικός. Simplicius, however, refers this sentence also to νοῦς πρακτικός, understanding the distinction intended by τῷ ἁπλῶς καὶ τινὶ to be the distinction between general propositions and particular cases, or between the major premiss and the minor premiss of the practical syllogism: 275, 18 ἄνευ...τοῦ πράττειν τι σκοπῶν τὰ πρακτὰ καὶ ὁποῖον τὸ ἐν αὐτοῖς ἀληθές τε καὶ ψεῦδος, ὡς πρακτικὸς καὶ τότε ἐνεργεῖ, οὐχ ὡς τότε πράττων τι, ἀλλ' ὡς ὅτε δέοι πράττειν, τῇ φανείσῃ αὐτῷ καθόλου χρησόμενος ἀληθείᾳ: an unnatural interpretation, which ignores *De A.* 433 a 14 διαφέρει δὲ τοῦ θεωρητικοῦ τῷ τέλει. Cf. *Eth. Nic.* 1139 a 27 τῆς δὲ θεωρητικῆς διανοίας καὶ μὴ πρακτικῆς μηδὲ ποιητικῆς τὸ εὖ καὶ κακῶς τἀληθές ἐστι καὶ ψεῦδος. What the genus is which includes τὸ ἀληθὲς and τὸ ἀγαθὸν may be gathered from *Metaph.* 1072 a 26—b 4, where τὸ ὀρεκτὸν τὸ πρῶτον and τὸ νοητὸν τὸ πρῶτον are identified. But the primacy is given to νοητὸν (ἀρχὴ γὰρ ἡ νόησις), and the series or list, συστοιχία, of what is *per se* νοητὸν is said to include not only ἡ οὐσία ἡ ἁπλῆ καὶ κατ' ἐνέργειαν, but also τὸ καλὸν καὶ τὸ δι' αὑτὸ αἱρετόν. To the same positive side of the table would belong τὸ ἀληθές. The subject of 431 b 12 διαφέρει is τὸ ἀληθὲς καὶ τὸ ἀγαθὸν or τὸ ψεῦδος καὶ τὸ κακόν. In the first case τῷ ἁπλῶς καὶ τινὶ is abbreviated for τῷ τὸ ἀληθὲς ἁπλῶς εἶναι ἀληθὲς καὶ τῷ τὸ ἀγαθὸν τινὶ εἶναι ἀγαθόν. This does not mean that good is πρός τι in the sense that there is no absolute good, but

that of the two senses of good or end-in-itself distinguished 415 b 2 (see *note* ad loc.) we are dealing with *τὸ ᾧ* and not with *τὸ οὗ*. Truth is constant, it is not *τὸ φαινόμενον*, 404 a 28 sq., whereas the good for a particular person or thing may very well be, and often is, other than *τὸ ἁπλῶς ἀγαθόν*. It is only in the judgment of the truly good man that they coincide, *Eth. Nic.* 1113 a 22—b 2, 1129 b 1—6, 1152 b 26 sq., *Eth. Eud.* VII. 15, 1248 b 26 sq., III. 1, 1228 b 19, VII. 2, 1235 b 31 sq., *Metaph.* 1029 b 5 *καὶ τοῦτο ἔργον ἐστίν, ὥσπερ ἐν ταῖς πράξεσι τὸ ποιῆσαι ἐκ τῶν ἑκάστῳ ἀγαθῶν τὰ ὅλως ἀγαθὰ ἑκάστῳ ἀγαθά, οὕτως ἐκ τῶν αὐτῷ γνωριμωτέρων τὰ τῇ φύσει γνώριμα αὐτῷ γνώριμα.* The task of the moralist is to make good absolute my good, the task of the thinker is to rise from the most familiar facts of experience to the laws of nature.

b 12 τὰ δὲ ἐν ἀφαιρέσει λεγόμενα...16 ὅταν νοῇ ἐκεῖνα. See Bywater in *Journ. of Phil.* XVII., p. 62: "The construction here has been misunderstood by some, through failure to see that in the clause *ὥσπερ ἂν εἰ κτέ.* the relative has as a grammatical antecedent the *οὕτω* before *τὰ μαθηματικά*, the sentence being in point of form just like that in III. 6, 430 a 28—30 (*καθάπερ...οὕτω κτέ.*) where the punctuation has been duly set right by Vahlen. And as regards the *ἂν* after *ὥσπερ*, I take it to be an anticipation of the *ἂν* in the apodosis (*ἄνευ τῆς σαρκὸς ἂν ἐνόει*), so that *ὥσπερ ἂν εἰ* is not to be understood in the same way as what is sometimes written *ὡσπερανεί*. The general sense of the passage, if we for a moment ignore all difficulties of detail, seems clear enough. As for *τὰ μαθηματικά*, though they are really inseparable, we think them as separate from matter, just in the same way as, if one thought the *σιμὸν* as simply hollow, one would think it so as apart from the flesh (the nose), the particular matter wherein it is found." For *τὸ σιμόν = κοιλότης ἐν ῥινὶ* (*Metaph.* 1030 b 32) see *note* on 429 b 14. The present passage affords a striking proof of the impossibility to the Greek of the time of conceiving *τὸ σιμὸν* as merely hollow without thinking of a nose, the imperfect indicatives *εἰ τις ἐνόει...ἂν ἐνόει* serving to express unfulfilled conditions: "if any one conceived (as he never does)." Bywater, thinking it impossible to get the required meaning out of the text as it stands, would reconstruct the earlier part of the passage as follows: *τὰ δ' ἐν ἀφαιρέσει λεγόμενα νοεῖ, ὥσπερ ἄν, εἴ <τις> τὸ σιμὸν ᾗ μὲν σιμὸν οὔ [κεχωρισμένως], ᾗ δὲ κοῖλον [εἴ τις] ἐνόει, ἐνεργείᾳ <νοῶν> ἄνευ τῆς σαρκὸς ἂν ἐνόει ἐν ᾗ τὸ κοῖλον, οὕτω τὰ μαθηματικὰ κτέ.* In this reconstruction b 14 *<νοῶν>* comes from b 17 and b 14 [*κεχωρισμένως*] is due to the variant *κεχωρισμένως* for b 16 *κεχωρισμένα* attested by Simpl. 278, 32. But the irregularity of the traditional text is partly explained if we reflect that of the two clauses *ᾗ μὲν σιμόν...ᾗ δὲ κοῖλον* it is only the second clause which is challenged: for the purpose of the argument it is superfluous to drag in the first at all, though this is done idiomatically to point the antithesis, and the antithesis is heightened by the scrupulous pedantry with which *οὐ κεχωρισμένως* is set over against *ἄνευ τῆς σαρκός*. When we come to b 16 *ὅταν νοῇ ἐκεῖνα*, it is scarcely possible to determine whether *τὰ ἐν ἀφαιρέσει λεγόμενα*, the classic phrase for *τὰ μαθηματικά* (see *note* on 403 b 15 *ἐξ ἀφαιρέσεως*), is felt by A. to be so far distinct from *τὰ μαθηματικὰ* as to justify him in using *ἐκεῖνα* instead of *αὐτά*. Bonitz and Vahlen conjecture *ᾗ ἐκεῖνα*. Trend. and Torst. understand *τὰ αἰσθητὰ* by *ἐκεῖνα*, but such a technical use of this pronoun is without authority. The way in which mathematical conceptions are abstracted and regarded by the mathematician has been explained on 429 b 18—22, where see *notes*. See also 403 a 12—15 with *notes*. As the word *νοεῖ* implies, the mathematical conceptions are *νοητά*, although the material objects from which alone they can be abstracted are *αἰσθητά*. Such is the plain teaching of 432 a 4 sq.: cf. *De Caelo* III. 7, 306 a 27

αἱ μὲν γὰρ [int. ἐπιστῆμαι] καὶ τὸ νοητὸν λαμβάνουσι διαιρετόν, αἱ μαθηματικαί, *Metaph.* 1077 b 34—1078 a 31, especially 1078 a 21 ἄριστα δ' ἂν οὕτω θεωρηθείη ἕκαστον, εἴ τις τὸ μὴ κεχωρισμένον θείη χωρίσας, ὅπερ ὁ ἀριθμητικὸς ποιεῖ καὶ ὁ γεωμέτρης, 1061 a 28—b 3. The present passage explains the statement *Metaph.* 1051 a 30 αἴτιον δ' ὅτι νόησις ἡ ἐνέργεια [int. τῶν μαθηματικῶν], as will be seen if the whole context 1051 a 21—33 be carefully examined. See first *note* on 430 a 21 *supra.*

b 17. [**νοῶν**]. The balance of authority (codd. LU, the first hand of E, Philop.) is against the retention of this word: Delevi b 17. νοῶν, quod deteriores libri aliquot addunt: legebatur enim: ὅλως δὲ ὁ νοῦς ἐστὶν ὁ κατ' ἐνέργειαν τὰ πράγματα νοῶν. Sine dubitatione ὁ κατ' ἐνέργειαν νοῦς est ὁ νοῶν νοῦς: sed illud satis erat dixisse (Torst.). We have had the statement before 430 a 3—9 and get it again directly 431 b 21.

b 18. τῶν κεχωρισμένων τι. See *note* on 403 b 15, ᾗ δὲ κεχωρισμένα. The fact that we do think τὰ κεχωρισμένα and that this is indeed the province of the metaphysician or First Philosopher is not questioned. The doubt is whether from this fact of experience any inference can be drawn as to the nature of intellect. **ὄντα αὐτὸν μὴ κεχωρισμένον.** The perfect participle κεχωρισμένος used as an adjective would seem to stand to χωριστὸς as διῃρημένος to διαιρετός.

b 19. σκεπτέον ὕστερον. Where this enquiry should come is matter for conjecture. From the form of the reference in *De Mem.* 1, 450 a 7 διὰ τίνα μὲν οὖν αἰτίαν οὐκ ἐνδέχεται νοεῖν ἄνευ τοῦ συνεχοῦς, οὐδ' ἄνευ χρόνου τὰ μὴ ἐν χρόνῳ ὄντα, λόγος ἄλλος, it would seem that when that treatise was composed it was not yet forthcoming.

CHAPTER VIII.

431 b 20—432 a 14. To sum up: the soul is in a manner the universe of things, which is made up of things sensible and things intelligible: and knowledge is in a manner identical with its object, the intelligible; sense with its object, the sensible. This statement calls for further explanation [§ 1]. Sense and knowledge, whether potential or actual, are distributed over things potential or actual, as the case may be. In the soul, again, the sensitive faculty and the cognitive faculty are potentially their respective objects. These objects must therefore exist in the soul, not indeed as concrete wholes, form and matter combined, which is impossible: it must be the *forms* of things which exist in the soul. Thus within the soul intellect is the form of forms, i.e. of intelligible forms, and sense the form of sensibles, precisely as in the body the hand is the instrument of instruments, i.e. the instrument by which other instruments are acquired [§ 2]. The world of things consists of extended magnitudes which sense can apprehend; and nothing else, it would seem, has independent existence. In the forms which sense apprehends are to be found the forms which the mind thinks; the abstractions of mathematics no less than the properties and conditions of sensible things. And this is why sense-perception is indispensable to the acquisition of knowledge and to understanding. And when the mind is applying its knowledge and actually thinking, mental images are indispensable, and these serve instead of present sensations. The imagining faculty, however, is something distinct from affirmation and negation, for it is a combination of notions which makes truth and falsehood. If it be asked, how the simplest notions are distinguishable from imaginations of sense, we reply

that in no case is the notion the image, even though it is never independent of an image [§ 3].

431 b 20. **τὰ λεχθέντα συγκεφαλαιώσαντες.** We proceed to sum up the conclusions as to thought already reached, viz. in III., cc. 4—7, and those for sense, mainly in III., c. 2. The solution of the problem of knowledge amplifies and expands various intimations given in the course of the treatise.

b 21. **πάλιν,** "over again," not simply "as our predecessors have said before us," although it is true that A. discovers the germs of his own doctrine in the interpretations which Empedocles and Plato gave of the principle that like is known by like: compare 404 b 8—15, 16—18, 409 b 27 *ὥσπερ ἂν εἰ τὴν ψυχὴν τὰ πράγματα τιθέντες.* Nor is *πάλιν* used quite in the sense noted *Ind. Ar.* 559 b 13 "*πάλιν* omnino progressum in narrando enumerando quaerendo significat." The re-statement here introduces the discussion which substitutes *τὰ τῶν ὄντων εἴδη* for the unqualified *τὰ ὄντα.*

b 22 **ἔστι δ'...23 τὰ ἐπιστητά πως.** See 430 a 3—9, especially a 4, 5, 430 a 19, 20, 431 a 1. Here Alex. Aphr., *De An.* 91, 7—92, 11 is excellent.

b 23. **ἡ δ' αἴσθησις τὰ αἰσθητά,** int. *πώς.* From 425 b 26—426 a 26 *πὼς* appears to represent the addition of *κατ' ἐνέργειαν* to *ἐπιστήμη...ἐπιστητά, αἴσθησις ...αἰσθητά*: but it is better referred to the qualification given b 28 sqq. *infra.*

b 24. **τέμνεται οὖν...εἰς τὰ πράγματα.** The authority for the text is not strong (see crit. *notes*), but in b 25 and b 26 there is no variant of *εἰς*: hence Torstrik's proposal to replace *εἰς* in a 24 by *ὥσπερ καί,* though apparently favoured by Bonitz (*Ind. Ar.* 754 a 30), leaves half the difficulty untouched. At the same time there can be no doubt that Torstrik's proposal gives the true sense; knowledge and sense-perception are divided by the same dichotomy as things. As things are either potentially or actually existent, so knowledge and sense may be either potential or actual. Thus Themistius, though we need not suppose, as Torstrik does, that he had *ὡς* or *ὥσπερ καὶ* or anything else but *εἰς* before *τὰ πράγματα*: 115, 15 H., 211, 27 Sp. *τὰ ὄντα τοίνυν τὰ μὲν δυνάμει τὰ δὲ ἐνεργείᾳ, οὕτω δὲ καὶ ἡ ψυχὴ τὰ μὲν δυνάμει εἴδη ἐστί, τὰ δὲ ἐνεργείᾳ· ὅταν μὲν γὰρ ἔχῃ τὴν ἕξιν τῆς αἰσθήσεως καὶ τοῦ νοῦ, μὴ ἐνεργῇ δέ, δυνάμει ἐστὶ τὰ ὄντα, ὅταν δὲ ἐνεργῇ ταῖς ἕξεσιν ἀμφοτέραις, ἐνεργείᾳ ἐστὶ τὰ ὄντα.* That *εἰς* with *τέμνεται* should mean "according to," i.e. by the same divisions, as something else, has no exact parallel. In Plato, *Laws* 738 A *ὁ δὲ τῶν τετταράκοντα καὶ πεντακισχιλίων* [int. *ἀριθμὸς*] *εἴς τε πόλεμον καὶ ὅσα κατ' εἰρήνην πρὸς ἅπαντα τὰ ξυμβόλαια καὶ κοινωνήματα, εἰσφορῶν τε πέρι καὶ διανομῶν, οὐ πλείους μιᾶς δεουσῶν ἑξήκοντα δύναιτ' ἂν τέμνεσθαι τομῶν,* the exact meaning of *εἰς* is made clear by the following *πρός*: the number 5040 has 59 divisors suitable alike for war and the transactions and associations of peace. The sense of *εἰς* is more unmistakeably final in *Pol.* 1330 a 11 *καὶ τούτων ἑκατέραν* [int. *ἀναγκαῖον*] *διῃρῆσθαι δίχα πάλιν, τῆς μὲν κοινῆς τὸ μὲν ἕτερον μέρος εἰς τὰς πρὸς τοὺς θεοὺς λειτουργίας, τὸ δὲ ἕτερον εἰς τὴν τῶν συσσιτίων δαπάνην.* In *Phys.* VII. 5, 250 a 17 *εἰς γὰρ ἂν κινοίη τὸ πλοῖον, εἴπερ ἥ τε τῶν νεωλκῶν τέμνεται ἰσχὺς εἰς τὸν ἀριθμὸν καὶ τὸ μῆκος, ὃ πάντες ἐκίνησαν,* the construction is not different from *εἰς δύο τέμνειν,* as may be seen if *εἰς ἑκατὸν* be substituted for *εἰς τὸν ἀριθμόν.* If the force employed in towing the vessel over a certain distance be the component of (say) 100 separate forces exerted by as many separate individuals, then, A. argues, it will follow that each single man moves the vessel, viz. one hundredth part of the distance. If, however, A. had written *εἰς τοὺς νεωλκούς,* as he very well might have done, in place of *εἰς τὸν ἀριθμόν,* the expression would have closely approximated to that before us, *τέμνεται εἰς τὰ πράγματα.* With *διαιρεῖν* we find *κατὰ* similarly used, e.g. *Rhet.* I. 8, 1365 b 27 *τὰ δὲ κύρια διῄρηται κατὰ τὰς*

πολιτείας· ὅσαι γὰρ αἱ πολιτεῖαι, τοσαῦτα καὶ τὰ κύριά ἐστιν. In the *Politics* we have sometimes *κατὰ* and sometimes *πρὸς* with *διαιρεῖν*: 1299 b 18 *πότερον κατὰ τὸ πρᾶγμα δεῖ διαιρεῖν* [int. *τὰς ἀρχὰς*] *ἢ κατὰ τοὺς ἀνθρώπους, λέγω δ' οἷον ἕνα τῆς εὐκοσμίας* [int. *πότερον ἐπιμελεῖσθαι δεῖ*] *ἢ παίδων ἄλλον καὶ γυναικῶν*, 1300 b 6, 1329 a 41, 1298 b 11 *διῄρηται μὲν οὖν τὸ βουλευόμενον πρὸς τὰς πολιτείας*, 1336 b 37 *δύο δ' εἰσὶν ἡλικίαι πρὸς ἃς ἀναγκαῖον διῃρῆσθαι τὴν παιδείαν.* It might also be suggested that in our present passage *τέμνεται εἰς* should be taken to mean "is distributed between" or "among." This meaning is expressed by *μερίζειν* with *εἰς* in *Pol.* 1265 b 3 *διὰ τὸ μερίζεσθαι τὰς οὐσίας εἰς ὁποσονοῦν πλῆθος*, 1321 b 37 *ἐνιαχοῦ μὲν οὖν μερίζουσι καὶ ταύτην* [int. *τὴν ἀρχὴν*] *εἰς πλείους, ἔστι δὲ μία κύρια τούτων πάντων.* Torstrik enquires: Cur *τέμνειν* dixit, non *διαιρεῖν*, quod in hac re solemne est? an propter Timaei *τμῆσιν*? If there is a Platonic reminiscence, it is more likely to be of the divided line in *Rep.* VI.: cf. 511 D, E *καί μοι ἐπὶ τοῖς τέτταρσι τμήμασι τέτταρα ταῦτα παθήματα ἐν τῇ ψυχῇ γιγνόμενα λαβέ, νόησιν μὲν ἐπὶ τῷ ἀνωτάτω...καὶ τάξον αὐτὰ ἀνὰ λόγον.*

b 25 ἡ μὲν δυνάμει...26 εἰς τὰ ἐντελεχείᾳ. It is a delicate question whether we should follow the two best MSS. in reading *δυνάμεις...ἐντελεχείας* (cf. Soph. 138, 37), or give the preference to *τὰ δυνάμει...τὰ ἐντελεχείᾳ*, the text of the inferior MSS., which is supported by the weighty authority of Them. 115, 15 sq. H., 211, 27 sqq. Sp., Simpl. 281, 6—8, Philop. 567, 9—11. The expressions are equivalent and both are found in A., but his use of the abstract nouns in the plural is less frequent. It is quite clear that here the words governed by *εἰς* do not denote parts into which the whole is divided, but provinces to which the divisions of the whole are assigned or correspond, that in fact *τέμνεται* is no effective part of the predicate. Potential sense and potential knowledge are thus assigned to things potentially existent as their province, actual sense and actual knowledge to things actually existent. Cf. *Metaph.* 1087 a 15—19.

b 27. δυνάμει ταὐτά ἐστι. "So the greater number of MSS. If *ταὐτόν* be read, it would seem better, with" the late "Prof. Chandler, to continue—*τὸ μὲν ἐπιστητῷ, τὸ δὲ αἰσθητῷ*" (Wallace, p. 283). Cf. Them. as cited above in *note* on 431 b 24 *ὅταν μὲν γὰρ ἔχῃ τὴν ἕξιν τῆς αἰσθήσεως καὶ τοῦ νοῦ, μὴ ἐνεργῇ δέ, δυνάμει ἐστὶ τὰ ὄντα.* See, e.g., 417 b 17 sqq., 429 b 5—9.

b 27. τὸ μέν, i. q. *τὸ ἐπιστημονικόν.* **τὸ δέ**, i. q. *τὸ αἰσθητικόν*: chiasmus, since b 26 *τὸ αἰσθητικὸν* preceded b 27 *τὸ ἐπιστημονικόν.*

b 28. ἀνάγκη δ' ἢ αὐτὰ ἢ τὰ εἴδη εἶναι. The subject is *τὸ αἰσθητικὸν καὶ τὸ ἐπιστημονικὸν* and the predicate *αὐτὰ ἢ τὰ εἴδη*, where by *αὐτὰ* must be understood *αὐτὰ τὰ αἰσθητὰ* and *αὐτὰ τὰ ἐπιστητὰ* respectively. Cf. Philop. 567, 25 *νῦν φησιν ὅτι ἀνάγκη ἐστὶν ἢ αὐτὰ τὰ σύνθετα εἴδη ἐν τῇ ψυχῇ εἶναι, τουτέστι μετὰ τῆς ὕλης καὶ τὸ εἶδος, ἢ αὐτὸ καθ' ἑαυτὸ τὸ εἶδος*, Simpl. 281, 18 *ἐὰν μὲν ᾖ σύνθετος ἡ οὐσία ἡ ἐπιστητή, οὐκ ἔσται αὐτὴ ἐν τῇ ἐπιστήμῃ, ἀλλὰ τὸ εἶδος αὐτῆς.* **αὐτὰ μὲν δή...29 ἐν τῇ ψυχῇ.** A.'s summary takes no account of the case where the thing known and its quiddity are identical, as in 429 b 12. The stone is a type of *σύνθετος οὐσία.* Cf. 410 a 10—13.

b 29. ἀλλὰ τὸ εἶδος. Cf. 429 a 27 *τόπον εἰδῶν*, *note* and 417 b 23: the universals, which are the content of knowledge, are in a manner in the soul itself. This correction probably renders precise the *πῶς* of b 21 and the advance which A. supposes he has made upon Empedocles.

432 a 2. ὄργανόν ἐστιν ὀργάνων. Cf. Philop. 567, 33 *ὃ λέγει τοιοῦτόν ἐστιν, ὅτι ὥσπερ ἡ χεὶρ ὄργανον οὖσα τοῦ σώματος ὀργάνοις κέχρηται, οἷον σκεπάρνῳ, εἰ τύχοι, τέκτων ἢ καλάμῳ, οὕτω καὶ ἡ ψυχὴ αὐτὴ εἶδος οὖσα ἄλλων εἰδῶν ἐστι δεκτική, διότι τοὺς λόγους τῶν εἰδῶν ἔχει παρ' ἑαυτῇ.* This is not the whole of what is implied in the simile. We use other instruments with the hand, but further the hand

itself shapes the instruments it uses. Cf. *De Part. An.* IV. 10, 687 a 7—23, of which I cite (a 19) *ἡ δὲ χεὶρ ἔοικεν εἶναι οὐχ ἓν ὄργανον ἀλλὰ πολλά· ἔστι γὰρ ὡσπερεὶ ὄργανον πρὸ ὀργάνων.* Anaxagoras had said that man is the most rational being because he has hands. Aristotle replies that man has hands because he is the most rational being, for the instrument must be adapted to its function, not the function to the instrument. The choice of the instrument is after all determined by the end in view, and the hand is so ingeniously contrived for various purposes that it takes the place of all other tools. Nature, who gives to each animal the instruments it can use, has given man hands because he has the intelligence to use them. In *Problems* XXX. 5 the question proposed is why we learn more quickly in youth, but have greater powers of mind in mature life. The solution begins by stating that we have two instruments in ourselves with which to make use of external instruments, and these are, in the body, the hand and, in the soul, *νοῦς*: (955 b 23) *ὁ θεὸς ὄργανα ἐν ἑαυτοῖς ἡμῖν δέδωκε δύο, ἐν οἷς χρησόμεθα τοῖς ἐκτὸς ὀργάνοις, σώματι μὲν χεῖρα, ψυχῇ δὲ νοῦν.* For intelligence is, as it were, a natural instrument in us, as distinct from the sciences and arts, which are instruments made by ourselves: (*ib.* b 25) *ἔστι γὰρ καὶ ὁ νοῦς τῶν φύσει ἐν ἡμῖν ὥσπερ ὄργανον ὑπάρχων· αἱ δὲ ἄλλαι ἐπιστῆμαι καὶ τέχναι τῶν ὑφ' ἡμῶν ποιητῶν εἰσίν, ὁ δὲ νοῦς τῶν φύσει*...(b 36) *ἔστι γὰρ νοῦ μὲν ὄργανον ἐπιστήμη (τούτῳ γάρ ἐστι χρήσιμος, καθάπερ αὐλοὶ αὐλητῇ), χειρῶν δὲ* [int. *ὄργανα*] *πολλὰ τῶν φύσει ὄντων.* The writer of this problem, who has made use of the passage in *De Part. An.* above referred to, may be putting his own construction on the simile of our text, but at any rate he is right in saying that the arts and sciences are useless without intelligence to apprehend and, as it were, hold them.

a 2. καὶ ὁ νοῦς εἶδος εἰδῶν. Bywater (*Journ. of Phil.* XVII., p. 63) thinks that *νοητῶν* must have dropped out after *εἰδῶν*. "In the expression *εἶδος εἰδῶν* the word *εἰδῶν* does not mean 'forms' generally—it seems to mean par excellence the *νοητὰ εἴδη*; but this is not the sense it bears in the immediate context, where we have two instances of the use of the word in the more general sense of 'form,' one just before this passage (431 b 29), the other two lines further on (432 a 5 *ἐν τοῖς εἴδεσι τοῖς αἰσθητοῖς τὰ νοητά* [scil. *εἴδη*] *ἐστι.*" Elsewhere the special meaning of *εἶδος* = *εἶδος νοητὸν* is without ambiguity in the context where it occurs, e.g. 429 a 15, 28, 431 b 2.

a 3 ἐπεὶ δὲ οὐδὲ πρᾶγμα...ὁ ἕξεις καὶ πάθη. Join *κεχωρισμένον* with *πρᾶγμα* and *τὰ αἰσθητὰ* with *μεγέθη*. The absence of a proper punctuation placed the ancient reader at a great disadvantage, as A. remarks *Rhet.* III. 5, 1407 b 12—18, but the comments of Philop. 568, 10 sqq. and Simpl. 284, 13—22 are astonishing. Simpl. was right in taking *κεχωρισμένον* with *πρᾶγμα*, though the transposition which he proposes for this purpose is unnecessary; but he failed to see that *τὰ αἰσθητὰ* goes with *τὰ μεγέθη*, and took *ὡς δοκεῖ τὰ αἰσθητὰ* together. Them. alone understood the construction: 115, 35 H., 212, 26 Sp. *οὐδὲν εἶναι πρᾶγμα δοκεῖ παρὰ τὰ μεγέθη τὰ αἰσθητὰ κεχωρισμένον.* The judgment of Simpl. was no doubt biassed by philosophic anxiety to vindicate the existence of *κεχωρισμένον τι τοῦ μεγέθους* (431 b 18 sq.). He overlooked the qualification *ὡς δοκεῖ*, by the use of which A. abstains from committing himself. Alex. Aphr. recognised one exception to the universality of this statement, viz. *τὰ κινητὰ τοῦ οὐρανοῦ εἴδη, χωριστὰ ὄντα* (apud Simpl. 284, 23 sqq.). Simpl. himself goes further: 283, 36 *ὁ νοῦς τὰ εἴδη ἐν τοῖς αἰσθητοῖς καὶ φανταστοῖς νοεῖ, οὐχ ἁπλῶς ἅπαντα (οὐ γὰρ καὶ τὰ ἄυλα)*...(285, 1) *καὶ ὅπερ διὰ τοῦ δοκεῖν πρότερον ἐνεδείξατο, ἐναργέστερον νῦν σαφηνίζει ἀφορίζων, τίνα κατ' ἀλήθειαν αἰσθητά, ἃ οὐκ ἔστι παρὰ τὰ μεγέθη, ὧν καὶ τὰ νοητὰ ἐν τοῖς αἰσθητοῖς καὶ φανταστοῖς ἐστιν εἴδεσι.*

a 6 τῶν αἰσθητῶν. These words might conceivably go with ὅσα, but it makes a better sense if we take them with ἕξεις καὶ πάθη. Cf. *Metaph.* 983 b 13—16, 1001 b 29—1002 a 2, 1015 b 28—34, 1020 a 17—22, 1061 a 7—10, *De Gen. et Corr.* I. 10, 327 b 15—17, *De Mem.* 2, 451 a 21—28. These passages show that the accidents which are predicated of substance and are supposed to inhere in it are often referred to comprehensively as ἕξεις, πάθη or διαθέσεις, when they are contrasted with substance itself.

a 7 καὶ διὰ τοῦτο...8 οὐθὲν ξυνίοι. The reason why the defect of a sense necessarily implies a corresponding defect of knowledge is clearly stated *Anal. Post.* I. 18. Induction and demonstration are the only roads to knowledge, and both are closed in the case assumed, induction from particulars being impossible without sense-perception, *Anal. Post.* I. 18, 81 b 5 ἐπαχθῆναι δὲ μὴ ἔχοντας αἴσθησιν ἀδύνατον. τῶν γὰρ καθ' ἕκαστον ἡ αἴσθησις, while the ultimate major premiss from which a demonstration starts involves an apprehension of universals, for which induction, and therefore sense-perception, will be again necessary: *ib.* 81 a 40 ἔστι δ' ἡ μὲν ἀπόδειξις ἐκ τῶν καθόλου...ἀδύνατον δὲ τὰ καθόλου θεωρῆσαι μὴ δι' ἐπαγωγῆς. The failure of a single sense cuts us off, not only from all the particulars of a given kind, but from the universals which the intellect might under other circumstances discern to be latent in those particulars and disentangle from them. Torstrik followed Bekker in restoring ξυνείη which, as heard, owing to itacism, no scribe could discriminate from ξυνίοι. His note is: quum aoristo opus sit, ex Bekkeri coniecturâ sic scripsi, non ξυνίοι: si ista coniectura est vocanda: nam libri LP [now styled y] S praebent ξυνίῃ. Cf. *Eth. Nic.* 1179 b 27, where two MSS. give, the one συνίῃ, the other συνιέναι, in place of συνείη. As to the appropriateness of the verb used, from *Eth. Nic.* 1143 a 11—18 it would appear that the special meaning of συνιέναι is to understand what is said to one, and that by means of knowledge which one already possesses, while from *Top.* IX. 3, 165 b 32 it appears that μανθάνειν itself might bear this meaning as well as the more obvious meaning of acquiring fresh knowledge. Thus under the disabilities imposed by the defect of a sense we can neither learn for ourselves nor be instructed by the conversation of a teacher.

a 8 ἅμα φαντάσματι, i.e. οὐκ ἄνευ φαντάσματος. Here again our authorities differ (see critical *notes*), E being supported by Them. 116, 8 H., 213, 10 sq. Sp. and Philop. 569, 5 sq. against inferior MSS. and Simpl. 284, 13. Mistake was inevitable if the archetype resembled, let us say, the papyrus in which the Ἀθηναίων Πολιτεία has been preserved. It was repeated apparently by the scribes of Philoponus: 569, 5 ἐπαναγκές ἐστι τὸν νοῦν ἅμα φάντασμά τι θεωρεῖν, τουτέστιν ὀργανικῷ τῇ φαντασίᾳ <κεχρῆσθαι>...(7) διὰ τούτων...λέγει ὅτι ὁ νοῦς ἅμα φαντασίᾳ ἐνεργεῖ, where ἅμα φαντασίᾳ makes it quite clear that Philop. intended φαντάσματι and not φάντασμά τι.

a 10 πλὴν ἄνευ ὕλης. This qualification must be understood even where, as in 431 a 15, it is not expressed. Compare 431 b 2—5. We must remember that by the definition 428 b 30—429 a 2 (cf. 428 b 10—30) imaginations are impressions of present sensations, or of past sensations resembling present sensations, except in so far as their matter is not present. Indeed, A. is careful to point out that one species of φαντάσματα, viz. memory, is not infrequently mistaken for a present sensation, *De Mem.* 1, 451 a 2—12.

a 10 ἕτερον φάσεως καὶ ἀποφάσεως. As here used, φάσις = κατάφασις, an affirmation, τὶ κατὰ τινός: cf. *note* on 430 b 26.

a 11 συμπλοκὴ γὰρ...12 ψεῦδος. See on 430 a 27, where the term is not συμπλοκή, but σύνθεσις.

a 12 τὰ δὲ πρῶτα...13 ἄνευ φαντασμάτων. The question is put whether *τὰ πρῶτα νοήματα* are anything distinct from images of sense, and it is clearly answered in the affirmative. If we adhere to the traditional text, it would seem as if the answer implied some sort of inference: *οὐδὲ τἆλλα, ergo* ne haec quidem. No explanation, then, of the text will be satisfactory unless (1) *τὰ πρῶτα* are opposed to *τὰ ἄλλα*, and unless (2) the sense given to *τὰ πρῶτα* is such that, when the conformity of *τὰ ἄλλα νοήματα* to the law previously laid down (431 a 16) that the mind never thinks without an image is admitted, the conformity of *τὰ πρῶτα νοήματα* to the same law follows as a matter of course, and the suspicion entertained about them vanishes. If, on the other hand, we alter *τἆλλα* to *ταῦτα* or interpret *τὰ ἄλλα* as meaning *τὰ πρῶτα*, we make A. allay the suspicion to which he has just given utterance by a mere *ipse dixit* without reason assigned. The above-mentioned conditions will be satisfied if we take *πρῶτα* to mean *ἁπλᾶ*, i.e. *ἀσύνθετα*. It will then follow that *τὰ ἄλλα* = *τὰ σύνθετα*, i.e. the notions employed by discursive thought in dealing with *τὸ ὂν ὡς ἀληθὲς* and *τὸ μὴ ὂν ὡς ψεῦδος*, the region in which, as we have just been reminded, there is *συμπλοκὴ* (or *σύνθεσις*) *νοημάτων ὥσπερ ἓν ὄντων* (430 a 27 sq.). In other words, all *νοήματα* are either (*a*) *πρῶτα καὶ ἁπλᾶ* or (*b*) *συμπλοκαὶ νοημάτων πρώτων καὶ ἁπλῶν*, judgments, whether implicit or explicit. I assume that A. regards (*b*) as the more familiar case and that here the truth of the proposition "The notion is something distinct from the image which is indispensable to it" is more easily recognised. Cf. Them. 116, 10 sq. H., 213, 12—14 Sp. cited below. In every logical judgment and in every compound notion capable of further analysis the part played by *νόημα* and *φάντασμα* is recognised as distinct. Cf. Them. 116, 18 H., 213, 24 Sp. *οὐ γὰρ ταὐτόν τό τε νόημα τὸ ἀπὸ τοῦ Σωκράτους καὶ ἡ φαντασία, ἀλλὰ τὰ μὲν φαντάσματα τύπος τις καὶ ἴχνος αἰσθήσεως καὶ ὥσπερ πεῖσις, εἴ μοι τὴν πεῖσιν νοοίης ὡς πολλάκις προειρήκαμεν, τὸ νόημα δὲ ἐνέργεια τοῦ νοῦ περὶ τὸ φάντασμα ὑποκείμενον. ταύτῃ τοι καὶ ποικίλως αὐτῷ* [the word *νόημα*] *χρῆται καὶ ταῖς πτώσεσιν ἐξαλλάττων καὶ τοῖς ἄρθροις.* If in the judgment or the compound notion capable of further analysis there is both *νόημα* and *φάντασμα* which are quite distinct; and if, further, the judgment and the compound notion are nothing but *συμπλοκαὶ νοημάτων πρώτων καὶ ἁπλῶν*, it follows that these two are present as distinct in that *στοιχεῖον* of discursive thought, the *πρῶτον νόημα*. For, if we resolve *πρῶτα νοήματα* into *φαντάσματα* and nothing else, we ought in consistency to find nothing but *φαντάσματα* in the products of such *πρῶτα νοήματα*, i.e. in judgments and in compound notions capable of analysis. On this view of the passage it becomes superfluous to determine whether *τὰ πρῶτα* are the highest notions, as Trend. supposes (*τὰ πρῶτα νοήματα*, ut *πρῶτοι ἀριθμοί*, ea esse videntur, a quibus reliquae veritatem repetunt) or the first results of abstraction, as Torst. holds: *τὸ πρῶτον νόημα* est prima abstractio, quae fit ubi a repraesentatione (*τῷ φαντάσματι*) eius quod *τῷ ἀριθμῷ* individuum est (*ὁ τὶς ἄνθρωπος*) transimus ad id quod *τῷ εἴδει* individuum est (*ὁ ἄνθρωπος*): quod discrimen potest rudiorem quemque latere. They need not invariably be, what Simpl. calls them, quiddities: 286, 2 *πρῶτα καλῶν τὰ τῶν οὐσιῶν αὐτῶν γνωστικὰ καὶ μάλιστα τὰ τῶν ἀΰλων εἰδῶν.* From *Anal. Post.* II., c. 19 we should certainly infer that in our experience the lower universals are formed first, the higher and the highest of all afterwards, for thought can separate as well as combine. A notion can be simple and uncompounded in the logical sense without being indivisible. Cf. 430 a 26—b 6 and *Metaph.* Θ., c. 10.

Others take the opposite view, according to which the question is sufficiently answered by the mere reassertion that images are indispensable to *τὰ πρῶτα*

νοήματα. Torstrik substituted ταῦτα for τἆλλα, a change approved by Freudenthal. Torstrik's critical note is: ταῦτα scripsi ex Them. The reading ταῦτα is presented by all the MSS. of Them. (116, 18), but the latest editor of Them., Heinze (not Hayduck, as is incorrectly printed in my critical *notes*), is obviously not convinced that the paraphrase as a whole justifies the word ταῦτα, for, against the authority of all the MSS. of Them., he has replaced it by τἆλλα. Cf. Them. 116, 10 H., 213, 12 Sp. ἔστι δὲ τὰ μὲν κατὰ συμπλοκὴν λεγόμενα καὶ νοούμενα φανερῶς ἕτερα τῶν φαντασμάτων. After illustrating this by examples, Them. resumes: 116, 15 H., 213, 19 Sp. καὶ αὗται πᾶσαι αἱ συμπλοκαὶ διαφέρουσιν ἀλλήλων τε καὶ τῶν φαντασμάτων, from which it may be argued that in the opinion of Them. the difference between imagining and thinking was more evident for the judgment than for the single notion. Nor is there any gain to the sense by reading ταῦτα, however the word be interpreted. Torst., as above noted, interprets it as the lowest universals, i.e. the least removed from sense, like the πρῶτον καθόλου of *Anal. Post.* II. 19, 100 a 15—b 3. By A.'s own doctrine, he says, that αἰσθητὰ εἴδη are in sensible things and νοητὰ εἴδη in the forms of sensible things, thinking is made to depend upon sensation and sensation upon the sensible thing. But this doctrine can be perverted into a denial that there is any thinking at all, as distinct from imagining: and the less remote notions are from sensations, the more plausible will be the perversion. Here, if anywhere, there would be a confusion between thought and image. Freudenthal also supports ταῦτα, though by τὰ πρῶτα νοήματα he understands, not with Torstrik the lowest universals, but, as I think rightly, simple, isolated, uncompounded notions, "unverknüpfte Begriffe." He thinks that, if A. meant solely the most general notions, like Unity, Being, he would not have raised the question, since such notions are least liable to be confounded with images. The activity of thought, we must repeat from 430 a 27—b 6, is shown both in combining and in separating. The judgment is a whole, a unity which the mind has made out of simpler elements, precisely as it can frame one φάντασμα out of several, 434 a 9 sq. But it can also separate and analyse, and its powerful solvent can be applied to those apparently simple unities, the quiddities, resolving man into biped animal etc., and converting simple apprehension of a quality, e.g. colour, into an assertion respecting it, τὶ κατά τινος.

CHAPTER IX.

From the discriminating faculties of sense and intellect, which have mainly occupied us from II., c. 5—III., c. 8 inclusive, we now pass to the faculty of locomotion which occupies III., cc. 9—11. The reason why intellect was taken first has been explained in the opening remarks on III., c. 4.

432 a 15—b 7. Of the two principal characteristics of the soul of animals we may dismiss the one, the discriminating faculty, now that sense and intellect have been determined, and turn to the latter, the power of local movement. We have to determine whether this power (1) belongs to the whole soul or (2) to a special part, and if it belongs to a special part, whether this special part has already been brought under our notice [§ 1]. This suggests the further enquiry, in what sense we can speak of "parts" of the soul. How many such parts should be recognised? From one point of view the parts of the soul are very numerous and the ordinary distinctions of rational and irrational soul, or of reason, spirit and appetite, are inadequate. If we look

to the differences on which such divisions are based, there is much more to be said for the classification adopted in this treatise. The distinction between our nutritive, sensitive, imaginative and appetitive faculties rests on wider and more fundamental differences; e.g. nutrition and growth belong to plants as well as to animals. Sensation cannot rightly be classed as either rational or irrational [§ 2]. Imagination is logically distinct from all the other faculties, whether it is locally separate or not. Appetency, again, stands apart. In the rational soul we find it appear as wish, in the irrational as anger and desire. If the soul be divided into three parts, appetency is found in each [§ 3].

In this digression A. returns once more to criticise the views of his predecessors, in particular the Platonic tripartite division of the soul, for which see *note* on 411 b 5.

432 a 15. ἐπεὶ δὲ ἡ ψυχὴ...τῶν ζῴων. Cf. the very similar opening of III., c. 3, 427 a 17—19. The soul of animals, as distinguished from plants, has been defined by two faculties or powers: a reference probably to 413 a 20—b 13. In that passage, after *τὸ ἄψυχον* had been separated from *τὸ ἔμψυχον* by the absence of growth, nutrition and decay, and the animal parted off from the plant by the minimum endowment of at least one sense, viz. touch, the conclusion is established that soul is determined by the principles of nutrition, sensation, understanding and motion, 413 b 11 *ἡ ψυχὴ...τούτοις ὥρισται, θρεπτικῷ, αἰσθητικῷ, διανοητικῷ, κινήσει.* Our present statement is limited to the soul of animals *ἡ τῶν ζῴων*, and therefore *θρεπτικόν*, which plants share with animals, is not regarded as a defining attribute of the animal, and, as we shall soon see, *τὸ κριτικὸν* combines under one *τὸ αἰσθητικὸν* and *τὸ διανοητικόν*. Moreover, stationary animals, like the zoophytes, to which attention was drawn in 413 b 2 sqq., are overlooked here, though they reappear later in this chapter 432 b 19 sqq., so that this more general statement of A.'s formula lacks somewhat of precision. As it stands, it bears a striking likeness to the summary of the views of his predecessors, or rather to the current *ἔνδοξον* on the subject, which A. gives in 403 b 25 sqq., repeated with modifications in 405 b 11 sqq. and in 409 b 19 sqq., 410 b 16 sqq. Hence Philoponus (570, 12) is disposed to see in our passage a direct reference to the views of former thinkers: *εἰ μεμνήμεθα, κατ' ἀρχὰς τῆς παρούσης ἐλέγετο πραγματείας ὅτι πάντες οἱ φυσικοὶ δύο τούτοις ὁρίζονται τὴν ψυχήν, τῷ δὲ γνωστικῷ καὶ τῷ κατὰ τόπον κινητικῷ· πρὸς ταῦτα γὰρ ἀπεῖδον. καὶ ἀπεδέχετο μὲν αὐτούς, διότι ἀπὸ τῶν ἐνεργειῶν τὴν οὐσίαν τῆς ψυχῆς ἐθήρευον.* It is not, however, to their crude views, but rather to A.'s own restatement of so much of them as he accepts, that *ὥρισται* refers.

a 16. τῷ τε κριτικῷ. See *notes* on *κρίνειν* 426 b 10, 427 a 18. Sense implies judgment or discrimination of sensibles 418 a 14, 422 a 21, 424 a 5 sq., 426 b 10 sqq., 429 b 14—16, 431 a 20. The same function belongs to imagination 428 a 1 sqq., cf. *De Insomn.* 2, 460 b 17. Hence the author of *De Motu Anim.* 6, 700 b 17 *ὁρῶμεν δὲ τὰ κινοῦντα τὸ ζῷον διάνοιαν καὶ φαντασίαν καὶ προαίρεσιν καὶ βούλησιν καὶ ἐπιθυμίαν. ταῦτα δὲ πάντα ἀνάγεται εἰς νοῦν καὶ ὄρεξιν. καὶ γὰρ ἡ φαντασία καὶ ἡ αἴσθησις τὴν αὐτὴν τῷ νῷ χώραν ἔχουσιν· κριτικὰ γὰρ πάντα.*

a 17. κινεῖν τὴν κατὰ τόπον κίνησιν. For the accusative see *notes* on 406 a 31, 410 b 20: cf. *infra* b 9 sq., b 14, *De Caelo* III. 8, 307 a 5 sq. *ἀλλ' οὐ τὴν τοῦ πυρὸς κίνησιν εὐκίνητα.*

a 19 πότερον ἕν τι...20 ψυχή. The possibilities considered imply three dichotomies. Locomotion is due (*a*) to a part, or (*b*) to the whole, of the soul. If to a part, such part may be (*c*) in magnitude, i.e. spatially, or (*d*) in thought and logically, separate and distinct. Again, it may be a part (*e*) not hitherto considered, to which this function is peculiar, or (*f*) identical with one of

those already discussed. Cf. 411 a 30—b 5 (especially b 1 πάσῃ...2 κινούμεθα), 413 b 13 sqq., 429 a 11 sq., *Eth. Nic.* 1102 a 28—32.

a 20. ἢ μεγέθει ἢ λόγῳ. See *notes* on 413 b 13 and 429 a 12: cf. 433 b 24 λόγῳ μὲν ἕτερα ὄντα, μεγέθει δ' ἀχώριστα.

a 21. κἂν εἰ. See *note* on 422 a 11.

a 21 ἴδιόν τι παρὰ τὰ...22 εἰρημένα. Are we to assume a separate "part," τὸ κατὰ τόπον κινητικόν, as was done provisionally or by implication 410 b 16—21, 411 b 22, 413 a 23 sq., b 21 sq., 414 a 32, b 17, 415 a 7, b 21—23? The Greek commentators distinguish τὰ εἰωθότα λέγεσθαι from τὰ εἰρημένα, referring the former to the Platonic tripartite division, Them. 116, 31 sq. H., 214, 15—17 Sp., Simpl. 287, 27—31, Philop. 573, 21 sq., and understanding by εἰρημένα the faculties previously recognised by A. himself, Simpl. 287, 25 sq., Philop. 573, 22—24. But there seems no ground for thus limiting the meaning of λέγεσθαι and εἰρημένα, since A. throughout has adopted terms in current use, though endeavouring to make them more precise than his predecessors had done. The reference is probably quite general. Cf. a 28 *infra*.

a 22. ἢ τούτων ἕν τι, e.g. τὸ ὀρεκτικόν, which was proved to belong to everything which has sensation in 414 b 1—15. **ἔχει δὲ ἀπορίαν εὐθύς.** The precise form in which the simple enquiry "What is it in the soul which imparts spatial motion?" has just been elaborated introduces a digression, 432 a 22—b 7, upon the old question in what sense we can speak of parts or faculties of the soul. Cf. 402 b 1—11, 413 b 13—16 and 414 b 20—415 a 13. It should be remembered that, in spite of his numerous cautions and explanations, A. has persistently used μόριον for nearly all his faculties, even when the term seems most inappropriate, e.g. 429 a 10 of νοῦς, 413 b 7, b 27. In fact, by keeping this an open question, A. considers himself entitled to use indifferently the terms μόριον, ἀρχή, δύναμις and διαφορὰ throughout.

a 24. ἄπειρα. Trend. (p. 441): Si animum partiri velis, partes sunt quasi infinitae; adeo varius est et uberrimus actionum fons, ut, quoniam singula quaeque quasi partes tenere licet, infinitae sint partes, Them. 117, 6 H., 215, 3 Sp. σχεδὸν γὰρ οὐκ εὐαρίθμητα φαίνεται τὰ μέρη τῆς ψυχῆς, εἰ τοιαύτας λαμβάνοι τις τὰς διαφοράς, αἷς τὸν θυμὸν καὶ τὴν ἐπιθυμίαν καὶ τὸν λογισμὸν χωρίζουσι. **καὶ οὐ μόνον...25 ἐπιθυμητικόν.** See again *note* on 411 b 5.

a 26. τὸ λόγον ἔχον καὶ τὸ ἄλογον. This division is directly attributed to Plato by the author of the *Magna Moralia* I. 1, 1182 a 23 μετὰ ταῦτα δὲ Πλάτων διείλετο τὴν ψυχὴν εἴς τε τὸ λόγον ἔχον καὶ εἰς τὸ ἄλογον ὀρθῶς, καὶ ἀπέδωκεν ἑκάστου ἀρετὰς προσηκούσας: and *Timaeus* 69 C sqq., where ἀρχὴ ψυχῆς ἀθάνατος, τὸ θεῖον, is distinguished from ἄλλο ψυχῆς εἶδος τὸ θνητόν, proves the dichotomy to have been the basis of Plato's tripartite division. But more probably the division was current long before Plato's time, and A. himself uses it as a popular opinion in *Eth. Nic.* 1102 a 26 λέγεται δὲ περὶ αὐτῆς καὶ ἐν τοῖς ἐξωτερικοῖς λόγοις ἀρκούντως ἔνια, καὶ χρηστέον αὐτοῖς. οἷον τὸ μὲν ἄλογον αὐτῆς εἶναι, τὸ δὲ λόγον ἔχον, where it serves as a basis for the distinction between ἠθικὴ and διανοητικὴ ἀρετή, an application of popular psychology in a popular treatise. Cf. H. Diels, *Ueber die exoterischen Reden des Aristoteles* in *Monatsbericht der Berl. Akad.* 1883, pp. 483 sqq.

a 26 κατὰ γὰρ τὰς διαφορὰς...28 τούτων. The error here censured is a logical error. What is required is a scientific classification in which the various classes and sub-classes do not overlap and are marked off from each other by essential distinctions. When tested by the rules laid down in the *Analytics*, the classifications of previous philosophers are faulty, and A.'s own classification as given in this treatise, if not ideally perfect, is far superior to the rest.

a 28. καὶ νῦν, i.e. in the present treatise: *καί*, "as a matter of fact," emphasises *εἴρηται*, cf. 424 b 24 sq. For *νῦν* = *νυνδή* cf. *Phys.* VIII. 3, 253 b 5 *νῦν ῥηθέντος*, *ib.* 254 a 17 *νῦν διορισθέντων*.

a 29 τό τε θρεπτικόν...30 καὶ τὸ αἰσθητικόν. These nominatives take up a 27 *καὶ ἄλλα...μόρια*, "namely, the nutritive part and the sensitive part." The omission of these "parts" is the most striking defect of the Platonic tripartition, a defect to be explained by the purpose which Plato had in view, and his divergent conception of the soul, which in the *Republic* and in most of the *Timaeus* means the human soul.

a 31. τὸ φανταστικόν. The position of imagination in A.'s scheme has never been cleared up. Images are results of sensations, but distinct from them, 428 b 11 sq.; but they serve as materials for thought, 431 a 14—15, b 2—5, 432 a 8—14. If it is not a distinct faculty, except from the logical aspect, should it go with sense or reason? In *De Mem.* 1, 450 a 10—14 it is by implication classed with sense, but with the qualification that it is *per accidens* related to thought. Cf. 429 a 4—8, 433 a 10, 432 b 29 sqq.

432 b 1. τῷ μὲν εἶναι πάντων ἕτερον. Cf. 413 b 29 *τῷ λόγῳ ὅτι ἕτερα, φανερόν· αἰσθητικῷ γὰρ εἶναι καὶ δοξαστικῷ ἕτερον, εἴπερ καὶ τὸ αἰσθάνεσθαι τοῦ δοξάζειν*. Similarly here *τὸ φανταστικῷ εἶναι* is not the same as *τὸ αἰσθητικῷ εἶναι*, *τὸ νοητικῷ εἶναι* or *τὸ δοξαστικῷ εἶναι* because, as was shown in detail 428 a 5—24, *φαντασία* itself is not the same as *αἴσθησις* nor the same as *νοῦς* nor the same as *δόξα*. **τούτων**, probably, like *πάντων*, the parts or functions assumed to be separate, quite generally, whatever they are. In a 27, 28 *supra* the pronoun no doubt refers to Plato's three parts or the division into rational and irrational. But there is no need to restrict the meaning here, any more than in a 22 *supra*.

b 3. ὃ καὶ λόγῳ καὶ δυνάμει ἕτερον. It is logically distinct, and its functions, i.e. the activities which are the basis for assuming such a faculty, are also distinct. Cf. Simpl. 290, 38 *τὸ γὰρ ὀρεκτικὸν ἐναργῶς τῷ λόγῳ ἐστὶν ἕτερον, ὡς καὶ ἡ ἐνέργεια αὐτοῦ δηλοῖ καὶ ἡ τῶν ἐνεργειῶν ἀποδοτικὴ δύναμις· διὸ καὶ πρόσκειται τῷ λόγῳ ἡ δύναμις*, Them. 117, 17—19 H., 215, 20—22 Sp.

b 4. καὶ ἄτοπον δή. A. contends that appetency is a part or faculty distinct from all the foregoing. Hence a further defect in the current classifications. If you begin with rational, irrational, you must include appetency under both (*ἄτοπον*...b 6 *ὁ θυμός*). If you prefer the tripartition, you have appetency in each of your three main divisions (b 6 *εἰ δὲ τρία*...7 *ὄρεξις*). The defect in classification here noted may be illustrated from the classification of animals. The infimae species have certain characteristics, *notae*, *διαφοραί*, and by dichotomy we cannot reach these marks, *De Part. An.* I. 3, 643 a 16 *φανερὸν τοίνυν ὅτι οὐκ ἔστι λαβεῖν τὰ ἄτομα εἴδη ὡς διαιροῦνται οἱ εἰς δύο διαιροῦντες τὰ ζῷα ἢ καὶ ἄλλο ὁτιοῦν γένος*. If, e.g., we start with land animals and water animals, we shall have the same groups of characteristics on both sides of the dividing line, land fowl and water fowl, land reptiles and water reptiles and so on. The important genera *ἔναιμα*, *ὄρνιθες* will be split up.

b 5. τὸ τοῦτο διασπᾶν. The verb *διασπᾶν*, to tear asunder, is usually applied to a whole which is split up or divided into parts, e.g. *ὁ ἀὴρ διασπώμενος* 411 a 20, 416 a 7. Cf. *De Part. An.* I. 2, 642 b 10 *ἔτι δὲ προσήκει μὴ διασπᾶν ἕκαστον γένος, οἷον τοὺς ὄρνιθας τοὺς μὲν ἐν τῇδε τοὺς δ' ἐν ἄλλῃ διαιρέσει*... b 16 *εἴπερ οὖν μηδὲν τῶν ὁμογενῶν διασπαστέον, ἡ εἰς δύο διαίρεσις μάταιος ἂν εἴη· οὕτως γὰρ διαιροῦντας ἀναγκαῖον χωρίζειν καὶ διασπᾶν· τῶν πολυπόδων γάρ ἐστι τὰ μὲν ἐν τοῖς πεζοῖς τὰ δ' ἐν τοῖς ἐνύδροις*. So Themistius 117, 19 H., 215, 23 Sp. *καὶ γὰρ ἄτοπον ἴσως τὸ διασπᾶν ταύτην τὴν δύναμιν καὶ τιθέναι αὐτὴν καὶ ἐν τῷ λόγον ἔχοντι καὶ ἐν τῷ ἀλόγῳ, καὶ μὴ ποιεῖν καὶ ταύτην χωρὶς ὥσπερ ἐκείνων*

ἕκαστον. But the splitting of the whole into parts implies the severance of one part from the rest. Cf. *Rhet.* II. 8, 1386 a 10 τὸ διασπᾶσθαι ἀπὸ φίλων καὶ συνήθων ἐλεεινόν. It is in this way that Simplicius takes διασπᾶν here: 291, 5 ἄτοπον οὖν καλῶς ἀποφαίνεται τὸ διασπᾶν τὸ ὀρεκτικὸν ἀπὸ τῶν ἄλλων.

b 5. **ἡ βούλησις.** In the present discussion, cc. 9—11, this term signifies rational wish, desire for the good, ὄρεξίς τις, viz. ὄρεξις λογιστική. With this agrees the summary of *Rhet.* I. 10, 1368 b 37 καὶ ὧν αὐτοὶ αἴτιοι, τὰ μὲν δι' ἔθος τὰ δὲ δι' ὄρεξιν τὰ μὲν διὰ λογιστικὴν ὄρεξιν τὰ δὲ δι' ἄλογον· ἔστιν δ' ἡ μὲν βούλησις ἀγαθοῦ ὄρεξις· οὐδεὶς γὰρ βούλεται ἀλλ' ἢ ὅταν οἰηθῇ εἶναι ἀγαθόν, ἄλογοι δ' ὀρέξεις ὀργὴ καὶ ἐπιθυμία: also *Eth. Nic.* 1111 b 19 sqq., *Pol.* 1334 b 22 θυμὸς γὰρ καὶ βούλησις, ἔτι δὲ καὶ ἐπιθυμία καὶ γενομένοις εὐθὺς ὑπάρχει τοῖς παιδίοις, ὁ δὲ λογισμὸς καὶ ὁ νοῦς προϊοῦσιν ἐγγίνεσθαι πέφυκεν. Like every form of ὄρεξις, βούλησις will appear before the rational faculty is fully matured.

b 6. **καὶ ἐν τῷ ἀλόγῳ...θυμός.** Cf. *Eth. Nic.* 1102 b 30 τὸ δ' ἐπιθυμητικὸν καὶ ὅλως ὀρεκτικὸν μετέχει πως [int. τοῦ λόγου], ᾗ κατήκοόν ἐστιν αὐτοῦ καὶ πειθαρχικόν. **εἰ δὲ τρία...7 ὄρεξις.** If, like Plato, we recognise three, not two, parts of the soul, appetency is in all three. Cf. 414 b 2.

432 b 7—433 a 8. To return to the question before us. The power of local movement must be kept distinct from the processes of growth and decay common to all animals and originating in the nutritive faculty; and, further, from the processes of respiration and expiration, of sleep and waking, which from their obscurity call for separate treatment (viz. in the *Parva Naturalia*) [§ 4]. What is it, then, that communicates to the animal local movement, or, more precisely, movement of progression? It is not (1) the nutritive faculty, for animal locomotion is always directed to an end and has either imagination or appetency for its concomitant. When not under compulsion, the animal moves only in order to seek or to avoid something. Again, if local motion were due to the nutritive faculty, plants as well as animals would have organs of locomotion [§ 5]. Nor is it (2) the sensitive faculty, for this view is disproved by the existence of stationary animals, possessed of sensation, which are at the same time neither mutilated nor imperfect. If the locomotive and sensitive faculties were identical, such animals would possess organs of progression [§ 6]. Nor is it (3) the reasoning faculty or intellect. The speculative intellect has nothing practical for its object. None of its assertions concern pursuit or avoidance. And even when intellect speculates on practical questions it does not prompt pursuit or avoidance, e.g. an imagination may be terrible or agreeable, may make the heart beat or the mouth water, without the least suggestion of progressive movement [§ 7]. Lastly, when the practical intellect enjoins avoidance or pursuit, it is liable to be thwarted by desire, i.e. appetite, as in the case of the incontinent man. And, generally, art or science alone is not sufficient to ensure scientific production or action. Something else is requisite. But again it is not (4) appetency alone which produces this local motion; witness the continent man who thwarts his inclinations and obeys reason [§ 8].

432 b 7. **καὶ δὴ καὶ.** Resumptive particles after the digression.

b 8. **τὴν μὲν γὰρ.** By γὰρ A. shows that he is restricting the enquiry to locomotion, or, as he more precisely expresses it below b 14, ἡ πορευτικὴ κίνησις. It is not the movement of growth and decay with which we are concerned, though that also in a sense goes on in space, as was explained in the *note* on 406 a 16. If it were, the nutritive faculty would be a sufficient cause. But A., having put the question as to what causes motion in space, deals parenthetically, as it were, b 8—13, with certain kinds of spatial motion due to soul other than

ἡ πορευτικὴ κίνησις. Cf. *Phys.* VIII. 2, 253 a 14 αὐτὸ δέ φαμεν [int. τὸ ζῷον] ἑαυτὸ κινεῖν οὐ πᾶσαν κίνησιν, ἀλλὰ τὴν κατὰ τόπον. There in the *Physics* 253 a 7—20, A. denies that the phenomena of animal motion (*ib.* a 9 τὸ συμβαῖνον ἐπὶ τῶν ἐμψύχων) lend any support to the view that motion has an absolute commencement, (a 11) ὁρῶμεν γὰρ ἀεί τι κινούμενον ἐν τῷ ζῴῳ τῶν συμφύτων· τούτου δὲ τῆς κινήσεως οὐκ αὐτὸ τὸ ζῷον αἴτιον, ἀλλὰ τὸ περιέχον ἴσως: and this he illustrates by the act of awaking from sleep. Cf. also the parallel passage *Phys.* VIII. 6, 259 b 1—20, especially b 8 ἔνεισιν ἄλλαι κινήσεις φυσικαὶ τοῖς ζῴοις, ἃς οὐ κινοῦνται δι' αὑτῶν, οἷον αὔξησις, φθίσις, ἀναπνοή, ἃς κινεῖται τῶν ζῴων ἕκαστον ἠρεμοῦν καὶ οὐ κινούμενον τὴν ὑφ' αὑτοῦ κίνησιν. τούτου δ' αἴτιον τὸ περιέχον καὶ πολλὰ τῶν εἰσιόντων, οἷον ἐνίων τροφή κτέ.

b 9. **ἅπασιν.** Not only all animals, but all plants as well, τοῖς ζῶσιν.

b 11 **περὶ δὲ ἀναπνοῆς...12 ἐπισκεπτέον.** The processes of respiration and expiration, of sleep and waking, involve motions of particular bodily parts. This reference is to the separate tracts of the *Parva Naturalia*, *De Somno*, *De Respiratione*, in which they are discussed.

b 13. **τί τὸ κινοῦν τὸ ζῷον.** If we may be allowed to anticipate, the result of c. 10 is that κινητικὸν κατὰ τόπον is virtually cancelled, being replaced by ὀρεκτικόν, 433 a 21, 31 sq., b 10 sq., 27 sq. For this result we have already been prepared: see 406 b 24 sq. The key to the whole discussion is the assumption that apart from desire or aversion no animal moves, unless it be under compulsion, cf. 432 b 16 sq., b 28 sq. In this chapter A. seeks to obtain an answer by a process of exhaustion, precisely as in III., c. 3 he applied the same process to answer the question, What is imagination? The claims of several faculties, the nutritive, the sensitive, the intellectual and the appetitive itself having first been examined, it appears as if, although some of these under certain circumstances originate local movement, no one of them is invariably the sole moving principle. The next chapter corrects and explains this provisional result.

b 14. **τὴν πορευτικὴν κίνησιν.** The conception of local motion is circumscribed as motion of progression. The whole, and not merely a part, is moved and changes its place. This restriction must be understood in what follows, both for κινεῖσθαι as in b 17, κινητικὰ b 18, κινῶν b 27, κίνησις b 28. **ὅτι... 15 δύναμις,** int. ἐστὶ τὸ κινοῦν τὸ ζῷον τὴν πορευτικὴν κίνησιν. The faculty of nutrition is the first claimant that we dismiss.

b 15. **ἀεί τε γὰρ ἕνεκά του ἡ κίνησις αὕτη.** This motion of progression has a common characteristic, viz. that it is directed to an end. The local movements of animals are made with the purpose of obtaining food or of avoiding harm. It is true that movements of growth and decay are also in a sense ἕνεκά του, for they tend to realise nature's end; so that this taken alone is hardly sufficient. It recurs 433 a 15 of ὄρεξις.

b 16. **ἢ μετὰ φαντασίας ἢ ὀρέξεώς ἐστιν.** This second condition, the presence of either φαντασία or ὄρεξις, contributes further to differentiate the local movement in question. In the local movements of growth there is nothing corresponding to φαντασία or to ὄρεξις in any of its senses. The disjunction ἢ...ἢ seems natural at this point. A. takes as sufficient for the purpose of rejecting θρεπτικὴ a form of the view, perhaps a current view, from which he starts in III., c. 10, viz. φαίνεται δέ γε δύο ταῦτα <τὰ> κινοῦντα, ἢ ὄρεξις ἢ νοῦς, εἴ τις τὴν φαντασίαν τιθείη ὡς νόησίν τινα. Here, as will be observed, the disjunction recurs. The next clause b 16 sq. οὐθὲν γὰρ κτέ. no doubt anticipates the conclusion that ὄρεξις of some kind is always present. Φαντασία and ὄρεξις here must be taken as corresponding to νόησις and ὄρεξις in 433 a 9 sq.,

φαντασία being here named instead of νοῦς to include the cases mentioned 429 a 5 sqq.; while in 433 a 9 sq., where A. is dealing more especially with man, such φαντασία is included under νόησις by what is probably a greater straining of language. Them. paraphrases ἢ...ἢ by καὶ...καί: 117, 30 H., 216, 7 Sp. ἀεὶ γὰρ ἕνεκά τινος ἡ κίνησις ἡ κατὰ τόπον καὶ μετὰ φαντασίας καὶ διώξεως ἢ φυγῆς τοῖς μὴ βίᾳ κινουμένοις ἀλλ' ἑκουσίως. It seems to me not worth while to enquire whether, as Philop. thinks, ὄρεξις is here used in the narrower sense of ἐπιθυμία (cf. *note* on 433 a 6 *ad fin.*), 582, 14 ὅσα γὰρ τῶν ζῴων φαντασίαν ἔχει, καὶ ὄρεξιν ἔχει, τὰ δὲ μὴ ἔχοντα φαντασίαν μόνην ὄρεξιν ἔχει. καὶ ἐφ' ὧν ἐστιν ἡ φαντασία, συγκινεῖται τῇ ὀρέξει, ἐφ' ὧν δὲ μή ἐστιν φαντασία, ἀρκεῖ καὶ ἡ ὄρεξις: or whether Simplicius is right in thinking the opposition intended is that between φανταστικὴ ὄρεξις and λογικὴ ὄρεξις, 292, 21 ἡ δὲ ἀντίθεσις δοκεῖ μοι οὐχ ἁπλῶς γνώσεως καὶ ὀρέξεως εἶναι, διότι γνωστικὸν ὄνομα ἡ φαντασία (πάντως γὰρ καὶ ὀρεκτικὸν καὶ γνωστικὸν τὸ κινοῦν), ἀλλὰ τῆς ὀρέξεώς μοι δοκεῖ εἶναι διαίρεσις, ἢ φανταστικῆς οὔσης, ὅπερ δηλοῖ τὸ μετὰ φαντασίας, ἢ λογικῆς.

b 16 οὐθὲν γάρ...17 ἢ βίᾳ. The movement of progression is simply the natural and spontaneous movement of animals in pursuit of something (ὀρεγόμενον = διῶκον) or in avoidance of what is painful and harmful. Cf. 431 a 13.

b 17 ἔτι...19 ταύτην. Two fresh arguments. If the nutritive principle were identical with the moving principle, then (1) plants, which have only the nutritive principle, would exhibit motion of progression, and accordingly (2) would have the parts instrumental to progression, which nature would not have neglected to supply in a whole class of things, 432 b 21 sqq.

b 19. ὁμοίως δὲ οὐδὲ τὸ αἰσθητικόν, int., as before, ἐστι τὸ κινοῦν τὸ ζῷον τὴν πορευτικὴν κίνησιν. **πολλὰ γάρ...21 διὰ τέλους.** See 410 b 19 and second *note* ad loc.

b 21. εἰ οὖν. The clause introduced by ὥστε, b 25, takes the place of an apodosis. **μήτε ποιεῖ μάτην μηθέν,** the teleological postulate so often previously assumed in this treatise, stated 415 b 16 sq. and restated explicitly 434 a 31 sq. Cf. *De Part. An.* I. 1, 641 b 12—29 ἡ φύσις ἕνεκά του ποιεῖ πάντα. φαίνεται γάρ, ὥσπερ ἐν τοῖς τεχναστοῖς ἐστὶν ἡ τέχνη, οὕτως ἐν αὐτοῖς τοῖς πράγμασιν ἄλλη τις ἀρχὴ καὶ αἰτία τοιαύτη, ἣν ἔχομεν καθάπερ τὸ θερμὸν καὶ τὸ ψυχρὸν ἐκ τοῦ παντὸς κτέ. For parallel statements consult *Ind. Ar.* 836 b 28—37, *De Gen. An.* V. 8, 788 b 20 ἐπεὶ δὲ τὴν φύσιν ὑποτιθέμεθα, ἐξ ὧν ὁρῶμεν ὑποτιθέμενοι, οὔτ' ἐλλείπουσαν οὔτε μάταιον οὐθὲν ποιοῦσαν τῶν ἐνδεχομένων περὶ ἕκαστον, *Pol.* 1256 b 20 εἰ οὖν ἡ φύσις μηδὲν μήτε ἀτελὲς ποιεῖ μήτε μάτην. There is normally in nature no useless excrescence, περίεργον, no random effort, ἀλόγως, ὡς ἔτυχε, no makeshift contrivance, πενιχρῶς, *Pol.* 1252 b 1 sqq.

b 22 πλὴν...23 ἀτελέσιν. Cf. 415 a 27 ὅσα τέλεια καὶ μὴ πηρώματα, where see *note*. That ἀτελῆ and πηρώματα denote two quite distinct conditions may be inferred from 425 a 10.

b 25. ὥστ' εἶχεν ἄν...τῆς πορείας. If αἰσθητικὸν = κινητικὸν κατὰ τόπον, then such animals would be capable of progressive motion and, since nature would not fail to provide what is necessary, they would also have the parts requisite for locomotion. This argument has already been applied to plants b 18 *supra*.

b 26 ἀλλὰ μὴν...27 ὁ κινῶν, i.e. the one cause of motion, and therefore of progressive motion. See analysis *supra*. This is the Platonic view. Καὶ is explicative. For ὁ καλούμενος νοῦς cf. 407 a 4, 429 a 22.

b 27. ὁ μὲν γὰρ θεωρητικὸς: μὲν is answered by b 28 ἀεὶ δὲ ἡ κίνησις κτέ. A. first shows that speculative intellect has nothing to do with action, while animal movement implies pursuit or avoidance, i.e. πρακτόν τι.

b 28. ἡ κίνησις, int. *τοῦ ζῴου*. This must be understood, like b 17 *κινεῖται*, in the restricted sense pointed out in *note* on b 14 *supra*.

b 29. ἀλλ' οὐδ' ὅταν θεωρῇ τι τοιοῦτον. Here A. passes to the intellect which does concern itself with action, cf. 431 a 15 sq. Hence the subject of *θεωρῇ* here must be *ὁ νοῦς* without qualification, and not *ὁ θεωρητικὸς νοῦς*, as in the last sentence. By *τι τοιοῦτον* is meant *πρακτόν τι* or, which is the same thing, *φευκτὸν ἢ διωκτόν τι*.

b 30. ἤδη κελεύει. The thought, even in this case, does not immediately prompt to movement: Them. 118, 10 H., 217, 3 Sp. *ὁ δὲ πρακτικὸς νοεῖ μέν τι περὶ τούτων, κύριος δὲ οὐκ ἔστι τῆς κινήσεως. πολλάκις γοῦν τι διανοεῖται φυγῆς ἄξιον καὶ οὐ φεύγει, οἷον σεισμὸν ἢ θηρίον, ἀλλὰ πάλλει μὲν ἡ καρδία καὶ φρίττουσιν αἱ τρίχες, μένει δὲ ἐν τόπῳ τὸ ζῷον· πολλάκις δὲ καὶ ἡδύ τι λογιζομένου μόριον μέν τι τοῦ σώματος συναισθάνεται, ἠρεμεῖ δὲ ὅλον τὸ ζῷον.*

b 30 οἷον πολλάκις διανοεῖται...31 φοβεῖσθαι. The point of the illustration has been missed by some of the commentators. If the intellect were the sole moving principle, why, asks A., does not motion ensue upon the presentation of an idea to the mind? The mere thought of something terrible is not sufficient to prompt flight, though it may be so vivid as actually to make the heart beat fast. As Themistius sees (118, 11 H., 217, 4 Sp.), *φοβεῖσθαι* implies not only fright but its consequence, actual flight: *πολλάκις γοῦν κτέ.* (see the citation in last *note*).

b 31. ἡ δὲ καρδία κινεῖται. This involuntary perturbation under excitement is a very different thing from the movement of progression of which A. is seeking an explanation. Not understanding this, Philoponus (583, 17) is obliged to confess that A. has chosen his illustrations badly. Cf. 408 b 8, 403 a 21 sq., 427 b 22 *εὐθὺς συμπάσχομεν*.

433 a 1. ἔτι. This is a third step, the second having been introduced by (432 b 29) *ἀλλ' οὐδ' ὅταν θεωρῇ κτέ.* Even the imperative command of the intellect does not invariably lead to action, for it is set at naught by the *ἀκρατής*, who in the conflict between *λόγος* and *ἐπιθυμία* obeys the latter.

a 2. οὐ κινεῖται, int. *τὸ ζῷον*.

a 3. ὁ ἀκρατής. See *Eth. Nic.* VII. cc. 1—3.

a 4. καὶ ὅλως δὲ ὁρῶμεν. A further and general argument to show that knowledge in itself is not sufficient to control action; its possessor, e.g. *ὁ ἰατρός*, further requires purpose (*προαίρεσις*).

a 5. ποιεῖν. To produce health designedly from sickness, *ἰᾶσθαι*, belongs to art and not to nature: hence *ποιεῖν*, *ποίησις* are more appropriate terms than *γεννᾶν*, *γένεσις*. See *Metaph.* 1032 a 25—30.

a 6 ἀλλὰ μὴν...7 κινήσεως. Having dismissed the claims of *ἡ θρεπτική*, *ἡ αἰσθητικὴ* and *τὸ λογιστικόν*, we now proceed to enquire whether the moving faculty is identical with *ὄρεξις*. As pointed out above (*note* on 432 b 13), *τὸ ὀρεκτικὸν* is unquestionably A.'s term for the faculty he is in search of, see 433 b 10 sq. If therefore he here disallows the claims of *ὄρεξις* he must be using the term in the narrow sense in which it denotes only *ἄλογος ὄρεξις*, i.e. in its more frequent shapes of *θυμὸς* and *ἐπιθυμία*. Cf. *Rhet.* I. 10, 1369 a 1 sq. *δι' ὄρεξιν* [int. *πράττουσι*] *τὰ μὲν διὰ λογιστικὴν ὄρεξιν τὰ δὲ δι' ἄλογον.* It is of course only *ἄλογος ὄρεξις* which is at variance with *νοῦς* and *λόγος*. Cf. a 8 *infra*, 433 b 5 sqq.

a 7. οἱ γὰρ ἐγκρατεῖς. Continent men, as distinguished from the virtuous *σώφρονες*, have depraved desires but do not obey them. *Eth. Nic.* 1102 b 26 *πειθαρχεῖ γοῦν τῷ λόγῳ τὸ τοῦ ἐγκρατοῦς*, *ib.* 1151 b 34 *ὅ τε γὰρ ἐγκρατὴς οἷος μηδὲν παρὰ τὸν λόγον διὰ τὰς σωματικὰς ἡδονὰς ποιεῖν καὶ ὁ σώφρων, ἀλλ' ὁ μὲν ἔχων ὁ δ' οὐκ ἔχων φαύλας ἐπιθυμίας, καὶ ὁ μὲν τοιοῦτος οἷος μὴ ἥδεσθαι παρὰ τὸν λόγον, ὁ δ' οἷος ἥδεσθαι ἀλλὰ μὴ ἄγεσθαι.*

CHAPTER X.

433 a 9–30. Apparently, then, there are two faculties which produce local movement, appetency and intellect, wherein we include imagination as a process of intellect. It is imagination, not thought or reasoning, which prompts the motion of animals, and in men knowledge is often counteracted by imagination [§ 1]. By intellect must be understood the practical intellect, which calculates the means to an external end, not the theoretical intellect, which finds its end in its own activity. Like practical intellect, appetency is always directed to an end: indeed, the practical intellect starts from this end of appetency, and the last step in its process of reasoning is the first step in action [§ 2]. So, too, when imagination originates motion, it does not do so apart from appetency. If motion had two distinct and independent originations, we should be bound to assume some other common faculty, in virtue of which these two independent powers communicated motion. But the fact is that intellect does not cause motion apart from appetency, while appetency does cause motion apart from intellect [§ 3]. There is, however, this difference, that intellect is always right, appetency and imagination are sometimes mistaken. For the object of appetency is not always the good, but sometimes the apparent good, where by good is meant the practicable good: and this belongs to the sphere, not of the necessary, but of the contingent, and will be different in different circumstances [§ 4].

433 a 9. φαίνεται. In the foregoing enquiry certain facts are clear. There are cases where *ὄρεξις*, i.e. *ἄλογος ὄρεξις*, prompts to movement, e.g. in the *ἀκρατὴς* and in irrational animals. There are other cases where the movement is determined by intellect or intelligence. The approximate result, then, is that both *νοῦς* and *ὄρεξις* in the narrower sense are principles of motion. Either one or the other controls movement under given conditions. This approximate result will, however, be modified as we proceed. I accept Prof. Bywater's insertion of *τὰ* before *κινοῦντα* (*Journ. of Philol.* vol. XVII., p. 64).

a 9 εἴ τις τὴν φαντασίαν...10 τινα. Cf. 427 b 14—21, 27 sq., where see *notes*. We have been told that *φαντασία* determines action, not only in irrational creatures, but under certain circumstances in men, 429 a 5 sqq., and there (429 a 5) *πολλὰ κατ' αὐτὰς* [int. *τὰς φαντασίας*] *πράττει τὰ ζῷα* seems a sufficient defence of *πολλὰ* in 433 a 10. Unless *φαντασία* be ranged with *νοῦς*, it would appear as if there were three, and not two, springs of action.

a 13. νοῦς καὶ ὄρεξις. Here *ὄρεξις* is still *ἄλογος ὄρεξις*.

a 14. νοῦς δὲ...πρακτικός. In the last section it must be understood that by *νοῦς* we mean the calculating intellect, which has an end in view, i.e. the practical, as opposed to the speculative, intellect. The distinction between them has been mentioned in passing 431 a 8—17 and 432 b 27—433 a 1. See also *Eth. Nic.* VI., c. 2, especially 1139 a 26 sqq., a 35 sqq. Peters renders the latter: "Mere reasoning, however, can never set anything going, but only reasoning about means to an end—what may be called practical reasoning (which practical reasoning also regulates production; for in making anything you always have an ulterior object in view—what you make is desired not as an end in itself, but only as a means to, or a condition of, something else; but what you do is an end in itself)."

a 15. τῷ τέλει. Cf. Them. 118, 32 H., 218, 7 Sp. *διαφέρει δὲ τοῦ θεωρητικοῦ τῇ πολλάκις εἰρημένῃ διαφορᾷ, ὅτι τῷ μὲν αὐτὴ τέλος ἡ ἐνέργεια, τῷ πρακτικῷ δὲ ἡ ὄρεξις ἄλλου τινὸς ἕνεκεν παρ' αὐτὴν τὴν ἐνέργειαν.* According to III., c. 6, the

speculative intellect has two modes of operation, viz. the thinking of indivisibles, φάναι ἢ νοεῖν, or the combining (συντιθέναι) of two notions in a judgment, with all the supplementary processes of deductive reasoning. In neither of these two modes of operation is the speculative intellect concerned with action. Practical intellect, on the other hand, has the problem set it of determining the means to a given end. How it treats this problem may be illustrated from *Metaph.* 1032 b 6—26 and *Eth. Nic.* 1112 b 11—20: "It is not about ends, but about means that we deliberate...having some particular end in view, we consider how and by what means this end can be attained, and if it appear that it can be attained by various means, we further consider which is the easiest and best: but if it can only be attained by one means, we consider how it is to be attained by this means, and how this means itself is to be secured, and so on, until we come to the first link in the chain of causes, which is last in the order of discovery" (Peters, *Eth. Nic.*, p. 70).

a 15 οὗ γὰρ ἡ ὄρεξις...16 νοῦ: αὕτη is the antecedent of οὗ and is assimilated to the gender of ἀρχή, and οὗ ἡ ὄρεξις [int. ἐστί]=τὸ ὀρεκτόν. Cf. for the attraction *Eth. Nic.* 1143 b 4 ἀρχαὶ γὰρ τοῦ οὗ ἕνεκα αὗται [int. τὸ ἔσχατον καὶ ἐνδεχόμενον καὶ ἡ ἑτέρα πρότασις (1143 b 3), i.e. the particulars, ἔσχατα, which constitute the minor premiss]. The practical intellect starts, in the manner exemplified in the passages just cited from *Eth. Nic.* and *Metaph.*, with the result desired and considers the conditions upon which its attainment depends, until it arrives at one which can be realised, τὸ ἔσχατον of the next clause.

a 16. τὸ δ' ἔσχατον ἀρχὴ τῆς πράξεως. When the practical intellect has reached its conclusion, i.e. has found some means to the end sought which is capable of realisation, e.g. bodily movement, its work is ended. Then begins the task of πρᾶξις or ποίησις, as the case may be. The expert or craftsman sets about doing or constructing, taking the last step in the intellectual process for his starting-point. His work continues until the end in view, which was the starting-point of the intellectual process, has been achieved. Cf. Them. 118, 34 H., 218, 10 Sp. ὁ γὰρ σκοπὸς ἐφ' ὃν ἡ θεωρία καὶ ἡ ὄρεξις, οὗτός ἐστιν ἀρχὴ τοῦ πρακτικοῦ νοῦ· πρὸς τοῦτον γὰρ ὁρῶν λογίζεται καὶ βουλεύεται περὶ τῶν πρακτέων· καὶ τὸ ἔσχατον αὐτῷ τῆς νοήσεως, εἰς ὃ ἵσταται βουλευόμενος, ὅπως ἂν τὸ τέλος περιποιήσαιτο, ἀρχὴ τῆς πράξεως καὶ αὖ πάλιν τὸ πέρας τῆς πράξεως ἡ τῆς νοήσεώς ἐστιν ἀρχή. Cf. *Eth. Nic.* 1143 b 2 ὁ δ' ἐν ταῖς πρακτικαῖς [int. νοῦς] τοῦ ἐσχάτου καὶ ἐνδεχομένου [int. καὶ ἄλλως ἔχειν] καὶ τῆς ἑτέρας προτάσεως. In the second edition of Trend. the view that in our present passage, *De A.* 433 a 16, τὸ ἔσχατον=τὸ κινοῦν ἀκίνητον, i.e. τὸ ὀρεκτόν, is defended by a reference to *Eth. Nic.* 1143 b 2. Cf. Trend.'s explanation of both passages in *Histor. Beitr. zur Philosophie*, II. 375 sqq., ad *Eth. Nic.* 1143 a 34. According to Trend., τὸ ἔσχατον (d. h. nach der Seite der Erscheinung hin) is "das im Handeln unmittelbar Einzelne," the particular act with which the series of acts terminates, the act the effort to realise which originates action. But I prefer to understand by τὸ ἔσχατον the particular action at the other end of the series, with which the series starts, the first step taken, which may not be, and often is not, τὸ ὀρεκτὸν itself, but only a means towards it.

a 17. ὥστε εὐλόγως. The two springs of action are now seen to hinge upon τὸ ὀρεκτόν. It is the object of the one faculty, τὸ ὀρεκτικόν, and it is the starting-point of the other faculty, διάνοια πρακτική, whose deliberations are concerned with the means by which it is to be realised.

a 18. τὸ ὀρεκτὸν γὰρ κινεῖ, int. τῷ νοηθῆναι ἢ φαντασθῆναι, b 12 *infra*. Wallace followed the inferior MSS. in reading ὀρεκτικόν.

a 19 καὶ διὰ τοῦτο ἡ διάνοια κινεῖ...20 ὀρεκτόν. This simply repeats a 15 οὗ

γάρ...16 *πρακτικοῦ νοῦ supra*. The understanding or practical discursive intellect is a moving cause, in so far as its syllogism points to a certain conclusion, i.e. an act to be done, whereupon action follows, as explained 434 a 19 *infra* ἤδη αὕτη κινεῖ ἡ δόξα, οὐχ ἡ καθόλου· ἢ ἄμφω. Cf. *Eth. Nic.* 1147 a 24—28, *De Motu An.* 7, 701 a 7—b 10. So far as διάνοια is an intellectual process, all it can do is to prescribe a course of action, 431 a 15 sq., 433 a 2 λεγούσης φεύγειν τι ἢ διώκειν, *Eth. Nic.* 1147 a 34. For διὰ τοῦτο...ὅτι cf. 435 a 24 sq., 434 a 10 αἴτιον τοῦτο...11 ὅτι.

a 20. καὶ ἡ φαντασία...ἄνευ ὀρέξεως. What holds of διάνοια πρακτική in man must hold of φαντασία in the lower animals. Cf. 429 a 4—8, 433 a 10—12.

a 21. ἓν δή τι τὸ κινοῦν τὸ ὀρεκτικόν. Cf. Simpl. 297, 32 ἤτοι τὸ ὀρεκτόν· διττὴ γὰρ ἡ γραφή. Ὀρεκτόν, the reading of E L W, Bekker, Trendelenburg, Belger and Wallace, was changed by Torstrik, who is followed by Biehl and Rodier, to ὀρεκτικόν. Torst. defends his choice thus: Scripsi τὸ ὀρεκτικόν, propter ea quae his opponuntur: εἰ γὰρ δύο, νοῦς καὶ ὄρεξις (h. e. τὸ ὀρεκτικόν), ἐκίνουν. It seems more probable that A. should complete his determination of the faculty, the immediate business in hand, before he refers animate motion to its prime movent, its ἀκίνητον κινοῦν. If so, having up till now consented to admit two moving causes, he prepares to make one of them subordinate to the other, practical reason to appetency.

a 21 εἰ γὰρ δύο...22 ἐκίνουν. A conditional clause of this grammatical form ordinarily implies that the condition is not fulfilled, while hitherto the two springs of action have been consistently affirmed more than once, 433 a 9, 17 sq. But the elasticity of the grammatical canon is notorious. See Postgate, *Transactions of the Camb. Philol. Soc.* vol. III., p. 63: "The presence of ἄν here" (i.e. in the apodosis) "marks the consequence as ideal, but not necessarily unfulfilled....The relation between the condition and the consequence is primarily one of limited possibility, not of strict conditional connexion between events assumed to be unreal."

a 22. κατὰ κοινὸν ἄν τι ἐκίνουν εἶδος, "in virtue of some characteristic which they shared in common." Cf. Them. 119, 9 H., 218, 26 Sp. εἰ δὲ ἦν δύο καὶ ἕτερα ἀλλήλων νοῦς καὶ ὄρεξις, ἐκίνει δὲ ἄμφω, ἄλλη ἄν τις δύναμις ὑπῆρχεν ἀμφοτέροις κοινή, ἧς ἀμφότερα κοινωνοῦντα ἐκίνει τὸ ζῷον, ὡς τῷ δίποδι καὶ τῷ τετράποδι τὸ πόδας ἔχειν. νῦν δὲ ὁ μὲν νοῦς οὐ φαίνεται κινῶν ἄνευ ὀρέξεως (εἴρηται γὰρ ὅτι καὶ ἡ βούλησις ὄρεξις), ἡ δὲ ὄρεξις καὶ ἄνευ νοῦ. **νῦν δέ.** When we examine the actual facts, we see that the two springs of action are not independent, for wherever νοῦς impels to action ὄρεξις is present, being found in the guise of βούλησις = ὄρεξις ἀγαθοῦ, while motion often takes place contrary to reason under the influence of ὄρεξις ἄλογος.

a 23. ἡ γὰρ βούλησις ὄρεξις. See above 414 b 2, 432 b 5.

a 24. κινῆται. The subject of this verb, as of κινεῖται, is τὸ ζῷον, in this case man: cf. 433 b 18.

a 25 ἡ δ' ὄρεξις...26 τίς ἐστιν. Cf. Them. 119, 13 H., 219, 3 Sp. ὄρεξις γάρ ἐστι καὶ θυμὸς καὶ ἐπιθυμία, καὶ παρὰ τὸν λογισμὸν κινεῖ πολλάκις.

a 26. νοῦς μὲν οὖν πᾶς ὀρθός. Cf. *Eth. Nic.* 1139 a 23 δεῖ διὰ ταῦτα μὲν τόν τε λόγον ἀληθῆ εἶναι καὶ τὴν ὄρεξιν ὀρθήν, 1139 b 4 διὸ ἢ ὀρεκτικὸς νοῦς ἡ προαίρεσις ἢ ὄρεξις διανοητική. The rectitude attributed to intellect as a spring of action consists, as we shall see, in this, that the good at which it aims is real, and not apparent, good. Hence Themistius (119, 17 H., 219, 7 Sp.) inserts in his paraphrase after νοῦς the words ὅ γε κυρίως, "if it is to deserve the name of νοῦς proper." **ὄρεξις δέ...27 ὀρθή.** Here, again, irrational springs of action are intended, ὄρεξις in the narrower sense: Them. 119, 18 H., 219, 8 Sp. φαντασία

ἢ χωρὶς νοῦ. These will be οὐκ ὀρθαὶ when they aim at apparent, and not real, good.

a 27 διὸ ἀεὶ...28 ἀγαθὸν. Cf. Them. 119, 20 H., 219, 11 Sp. ἀλλὰ τὸν μὲν νοῦν τὸ ἀληθινὸν ἀγαθόν, τὸ φαινόμενον δὲ τὴν ἐπιθυμίαν καὶ τὸν θυμόν [int. κινεῖ], *Eth. Nic.* 1113 a 15—b 6, from which I cite a 23 ἁπλῶς μὲν καὶ κατ' ἀλήθειαν βουλητὸν εἶναι τἀγαθόν, ἑκάστῳ δὲ τὸ φαινόμενον, 1114 a 31 πάντες ἐφίενται τοῦ φαινομένου ἀγαθοῦ, τῆς δὲ φαντασίας οὐ κύριοι, ἀλλ' ὁποῖός ποθ' ἕκαστός ἐστι, τοιοῦτο καὶ τὸ τέλος φαίνεται αὐτῷ, *Eth. Eud.* VII. 2, 1235 b 25 τὸ γὰρ ὀρεκτὸν καὶ βουλητὸν ἢ τὸ ἀγαθὸν ἢ τὸ φαινόμενον ἀγαθόν.

a 29. οὐ πᾶν δὲ...ἀγαθόν. Good as the end which sets appetency in motion is limited to practical, i.e. contingent, good. Cf. Them. 119, 22 H., 219, 15 Sp. οὐ πᾶν δὲ ἀγαθὸν κινητικὸν τῆς ὀρέξεως· οὐ γὰρ τὸ πρῶτον οὐδὲ εἴ τι ἁπλῶς ἀγαθὸν καὶ ἀΐδιον· τοῦτο μὲν γὰρ ἴσως κοινὸν ἅπασι τὸ ὀρεκτὸν καὶ ἄλλον τρόπον ὃν ὕστερον ἐπισκεπτέον. νῦν δὲ τὸ ἑκάστῳ τῶν ζώων αἴτιον τῆς κινήσεως ἐπιζητοῦμεν, ὅπερ ἤδη τὸ ἐν μέρει ἐστὶν ἀγαθὸν καὶ τὸ ἐνδεχόμενον καὶ γενέσθαι καὶ μὴ γενέσθαι, καὶ τὸ μὴ ἁπλῶς ἀλλὰ τινὶ καὶ ποτὲ καὶ πρὸς τόδε. **πρακτὸν δ' ἐστὶ...30 ἔχειν.** Contingent events are assigned to the λογιστικὸν μόριον τῆς ψυχῆς, as distinct from the ἐπιστημονικόν, *Eth. Nic.* 1139 a 6 sqq. (especially a 12—14), 1140 b 2 ἐνδέχεται τὸ πρακτὸν ἄλλως ἔχειν, also 1141 b 10 βουλεύεται δ' οὐδεὶς περὶ τῶν ἀδυνάτων ἄλλως ἔχειν.

433 a 31—b 30. We have, then, to recognise an appetitive faculty related to the object of appetency. Any division of faculties of the soul which is based upon functions must be elastic enough to admit a great variety of such parts. Such faculties as the sensitive, nutritive, ratiocinative, deliberative, appetitive differ from each other more widely than appetite or desire does from spirit or passion in the scheme of the Republic [§ 5]. The conflict of motives is explained as follows: reason and desire may be at variance in beings which have perception of time. Desire takes the pleasurable of the immediate future for the absolutely pleasurable and the absolutely good. Thus it prompts to indulgence. Reason, out of regard to the more distant future, bids us refrain. The motive principle is always specifically one and the same, viz. the faculty of appetency as such, which has for its prime unmoved movent the object of appetency; the latter originating motion by being thought or imagined. There is, however, numerically a plurality of springs of motion [§ 6]. The elements of motion are (1) the movent, whether (*a*) immovable or (*b*) moved; (2) that with which it produces motion; (3) that in which motion is produced. Here (*a*), the unmoved movent, is the practical good, the good which is the end of action, while (*b*), the movent which is itself moved, is the faculty of appetency set in motion by the object of appetency and communicating motion to the appetent subject *quâ* appetent. Again, (3) that which is moved is the animal, and in (2), the instrument of motion, we come to that which is corporeal (e.g. a limb). This bodily instrument by which appetency produces its effect must be studied among the functions which are common to body and soul [§ 7]. Briefly, this instrument is found where the same thing is the beginning and end, e.g. the ball and socket joint, where the concave and convex act together, the one being the end and the other the beginning, so that, while one point is at rest, the other is in motion. Locally inseparable, they are logically distinct. All movement comes about by pushing and dragging, and consequently implies a fulcrum or point at rest [§ 8]. Hence, generally, the animal, *quâ* appetitive, is capable of self-motion, but it is not appetitive apart from imagination, and imagination, again, is derived from sense or from intellect. And in this faculty (imagination) animals other than men participate [§ 9].

433 a 31 ὅτι μὲν οὖν...433 b 1 φανερόν. Here, then, is the result of the investigation begun in a 9 *supra*. The faculty of soul which originates motion is ἡ καλουμένη ὄρεξις in the wider sense of that term, i.e. τὸ ὀρεκτικόν, a 21.

433 b 1. τοῖς δὲ διαιροῦσι. At this point A. indulges in one more criticism of the Platonic tripartition in the *Republic*. If we are to make parts of the soul, basing our partition upon division of function, among such parts ὀρεκτικὸν is entitled to a place: cf. Them. 119, 33 H., 219, 28 Sp. μεθ' ὧν δὴ καὶ τὸ ὀρεκτικὸν τοῦτο περὶ οὗ ὁ λόγος διώρισε.

b 3. βουλευτικόν. Comparing this list of five "parts" with that given 414 a 31 sq., we see that κινητικὸν κατὰ τόπον is absent and for the first time in the treatise βουλευτικὸν is introduced (cf. 434 a 12). Cf. *Eth. Eud.* II. 10, 1226 b 25 βουλευτικὸν τῆς ψυχῆς. In *Magna Moralia* I., c. 35 it has to do with contingent matters: 1196 b 27 τὸ δὲ βουλευτικὸν καὶ προαιρετικὸν περὶ τὰ αἰσθητὰ καὶ ἐν κινήσει, καὶ ἁπλῶς ὅσα ἐν γενέσει τε καὶ φθορᾷ ἐστίν. βουλευόμεθα γὰρ ὑπὲρ τούτων ἃ ἐφ' ἡμῖν ἐστὶ καὶ πρᾶξαι καὶ μὴ πρᾶξαι προελομένοις. Thus it fairly corresponds with τὸ λογιστικὸν of *Eth. Nic.* 1139 a 12 sqq., as distinct from τὸ ἐπιστημονικόν, these two being the subdivisions of the λόγον ἔχον. Τὸ βουλευτικὸν can hardly therefore be a division of the same rank with the other four. The mention of νοῦς πρακτικὸς 433 a 14, διάνοια πρακτική 433 a 18 and the admission 432 b 29 that νοῦς does sometimes deal with the contingent would seem to involve some similar division of τὸ νοητικόν, hitherto used as a comprehensive term for the faculty corresponding to νοῦς. The term ἐπιστημονικὸν has occurred 431 b 27, and recurs 434 a 16, and we might have expected ἐπιστημονικόν, βουλευτικὸν here instead of νοητικόν, βουλευτικόν. In 432 b 26 λογιστικὸν is as vague as νοῦς.

b 5 ἐπεὶ δ'...13 τὰ κινοῦντα. This is a cumbrous and complicated sentence. Omitting parentheses, we obtain the gist of it in a simpler form ἐπεὶ δ' ὀρέξεις γίνονται ἐναντίαι ἀλλήλαις...εἴδει μὲν ἓν ἂν εἴη τὸ κινοῦν τὸ ὀρεκτικόν, ᾗ ὀρεκτικόν, πρῶτον δὲ πάντων τὸ ὀρεκτόν...ἀριθμῷ δὲ πλείω τὰ κινοῦντα. Thus simplified, the inference drawn from the conflict of desire is that the unity of the appetitive faculty does not preclude a plurality of springs of motion.

b 5. ὀρέξεις γίνονται...ἀλλήλαις. The examples show that ὀρέξεις here must be taken in the wider signification, so as to include both λόγος (or λογισμὸς or βούλησις) and ἐπιθυμία. Hence the conflict can be seen in the case of the ἀκρατὴς and the ἐγκρατής: cf. 433 a 1—3, 6—8. Cf. also 434 a 12—14.

b 7. ἐν τοῖς χρόνου αἴσθησιν ἔχουσιν, preeminently, if not exclusively, in man. Cf. Them. 120, 11 H., 220, 16 Sp. καὶ μάλιστά γε ἐν ἀνθρώπῳ· οὗτος γὰρ αἰσθάνεται χρόνου καθ' αὑτό, τὰ δὲ ἄλλα κατὰ συμβεβηκός, οὐ γὰρ τοῦ χρόνου ἀλλὰ τοῦ πάθους οὗ ἔπαθε πάλαι· ἀμέλει τοῦ μέλλοντος οὐδὲν αὐτῶν αἴσθησιν ἔχει, ὅτι μηδὲ πάσχει τι ἐν τῷ μέλλοντι· εἰ μὴ ἄρα ἐν μύρμηξι καὶ μελίτταις καὶ τοῖς ἀποθησαυρίζουσι τὴν τροφὴν ἔστι πως καὶ τοῦ μέλλοντος αἴσθησις χρόνου. ἄνθρωπος δὲ μόνος 'ἅμα πρόσσω καὶ ὀπίσσω'· μόνος γὰρ νοῦν ἔχει ᾧ τὸ πρότερον ἀριθμεῖ καὶ τὸ ὕστερον, ὁ δὲ ἀριθμὸς οὗτος χρόνος ἐστίν. Them. goes out of his way to criticise Alex. Aphr. for calling man ποιητὴς τοῦ χρόνου, which, according to Them., implies that time has no objective existence.

b 7 ὁ μὲν γὰρ νοῦς...8 τὸ ἤδη. With ἀνθέλκειν κελεύει cf. 432 b 30 κελεύει διώκειν ἢ φεύγειν, b 31 οὐ κελεύει δὲ φοβεῖσθαι. Hence we must complete the second clause thus: ἡ δὲ ἐπιθυμία διὰ τὸ ἤδη <διώκειν κελεύει>. The antithesis is between the more distant future and the moment immediately following, τὸ ἐγγὺς τοῦ παρόντος νῦν χρόνου, as Trend. well observes: Subtiliter scriptor τὸ ἤδη, nec vero τὸ νῦν posuit. Cupido enim non temporis punctum, quod adest (in hoc enim haud acquiescit), sed quod instat, intuetur. Cf. *Phys.* IV. 13,

222 b 7 *τὸ δ' ἤδη τὸ ἐγγὺς ἐστι τοῦ παρόντος νῦν ἀτόμου μέρος τοῦ μέλλοντος χρόνου*, Them. 120, 22 H., 221, 4 Sp. [*ὧν*] *ὁ μὲν* [int. *ὁ νοῦς*] *διὰ τὸ μέλλον ἀνθέλκει, ἡ δὲ ἐπιθυμία τὸ παρὸν ἡδὺ διώκει.*

b 8 φαίνεται γὰρ τὸ ἤδη...9 ἁπλῶς. This illustrates 433 a 28 *τὸ φαινόμενον ἀγαθόν*. The first mistake is the confusion of immediate and relative pleasure with absolute pleasure: cf. *Eth. Nic.* 1099 a 11—15, 1155 b 26—33, 1176 a 8—29. A.'s standard is *ὁ σπουδαῖος*, and true pleasure that which he thinks so: cf. *Eth. Nic.* 1113 a 25—b 2, 1176 a 15 sqq. The second mistake is to confuse pleasure with good absolute. Absolute good is indeed absolutely pleasant, *Eth. Nic.* 1156 b 22 sq., but the converse is not always true, *ib.* 1113 a 31—b 2.

b 10. διὰ τὸ μὴ ὁρᾶν τὸ μέλλον. The subject of *ὁρᾶν* may be *τὸν ὀρεγόμενον* or *τοῦτον ᾧ φαίνεται*.

b 11 πρῶτον δὲ πάντων...12 φαντασθῆναι. This is parenthetical: cf. Simpl. 300, 20 *πρὶν δὲ πάλιν ἀποδοῦναι πρὸς τὸ εἴδει μὲν ἂν ἓν εἴη "πλείω δὲ τῷ ἀριθμῷ," διότι δύο τὰ ὀρεκτικὰ καὶ μαχόμενα ἐνίοτε ἀλλήλοις, τό τε λογικὸν καὶ τὸ ἀλόγως ὀρεγόμενον, ἐν μέσῳ ὑπέμνησεν ὡς πρὸ τοῦ ὀρεκτικοῦ τὸ ὀρεκτὸν κινεῖ.* The parenthesis serves to explain 433 a 9 sq., where *φαντασία* was included under *νοῦς* as a cause of movement.

b 13. ἐπειδὴ δ' ἐστὶ κτλ. The grammatical structure of the sentence is obscure. Alex. Aphr. (ap. Philop. 590, 39 sq.) rightly held that there was no apodosis to *ἐπειδή*. Plutarch of Athens (ap. Philop. 591, 1 sqq.) supposes the suppressed apodosis to be *τέτταρα ἄρα ἐστὶ τὰ τῇ κινήσει συμβαλλόμενα*: since three things are implied in motion and one of them appears in a twofold form, therefore the things which contribute to motion are really four. Apparently the missing apodosis, which seems extraordinarily feeble as so supplied, should have come after b 15 *τὸ δὲ κινοῦν καὶ κινούμενον*. This view is accepted by Simpl. 300, 34—301, 1, who sees a natural transition to the enumeration of all four in b 15—21. His words are: (300, 1) *ἐφ' οἷς εὐλόγως καταριθμεῖται, τίνα τὰ τέσσαρα.* Both these views admit anacoluthia: indeed, the only alternative would be to suppose that A. introduced an apodosis with *δέ*, either at b 15 *ἔστι δὲ* or, less probably, at b 14 *τὸ δὲ κινοῦν*. But in the judgment of Bonitz (*Arist. Stud.* II., III., pp. 124—129) there is no adequate evidence that A. so far departed from the ordinary usage of Attic prose. The simplest explanation is to assume an oversight of the writer, which is more startling in a comparatively short sentence like the present than in some of the long and involved sentences which commence with *ἐπειδὴ* and *ἐπεί*, such as 414 a 4 sqq., 427 a 17—b 8 or that commencing with *εἰ οὖν* 434 a 32—b 8. "Zweifelhaft ist, ob die Erinnerung an die sprachlich untergeordnete Form des Vordersatzes erhalten geblieben ist," says Bonitz of less irregular constructions. In the present case, if we disentangle the thought from the confused form of the expression, it will be "Since there are three (or rather, four) things implied in motion generally, we must discover something corresponding to each of them in this particular case of motion."

b 13. τρία. That motion cannot be explained without assuming this series of three factors, namely (1) the unmoved movent, which communicates but does not receive motion, (2) the movent which is itself in motion, (3) that which is moved but not itself a movent, is the doctrine laid down in the *Physics*, e.g. VIII. 5, 256 b 14 *τρία γὰρ ἀνάγκη εἶναι, τό τε κινούμενον καὶ τὸ κινοῦν καὶ τὸ ᾧ κινεῖ. τὸ μὲν οὖν κινούμενον ἀνάγκη κινεῖσθαι, κινεῖν δ' οὐκ ἀνάγκη, τὸ δ' ᾧ κινεῖ, καὶ κινεῖν καὶ κινεῖσθαι· συμμεταβάλλει γὰρ τοῦτο ἅμα καὶ κατὰ τὸ αὐτὸ τῷ κινουμένῳ ὄν. δῆλον δ' ἐπὶ τῶν κατὰ τόπον κινούντων· ἅπτεσθαι γὰρ ἀλλήλων ἀνάγκη μέχρι τινός· τὸ δὲ κινοῦν οὕτως ὥστ' εἶναι μὴ ᾧ κινεῖ, ἀκίνητον.* It is also stated *Metaph.*

[illegible] however the [illegible] [illegible] instrument [illegible]

[illegible] by starting with [illegible] [illegible] passage as represented [illegible]

[illegible] although belonging to [illegible] for appearance [illegible] *Metaph.* 1072 a 26 [illegible] *De Motu An.* [illegible] This [illegible] is useful for illustration.

[illegible] All modern editors, from [illegible] as the subject of the second clause. The two last [illegible] and Trend. but also, [illegible] notes, by Bent.: as ἡ ἐνέργεια by [illegible] Torst. p. 207 note; as [illegible] I accept the latter and, with this exception, have printed [illegible] and translated accordingly. But it is [illegible] the divergence between codd. E L [illegible] MSS., which read either ἡ ὄρεξις κίνησίς τις or [illegible] the animal which is moved is moved in so [illegible] if A. wishes to prove that τὸ ὀρεκτικόν [illegible] refer this clause, not to the animal, [illegible] is open to Torstrik's telling objection: Manifestum [illegible] si lapis iacitur vel cadit, [illegible] The materials for a more satisfactory restoration of [illegible] Philoponus 591, 12 κινεῖται γὰρ τὸ κινοῦν ᾗ [illegible] ἡ κίνησις ἐστιν ἡ ἐνέργεια. I conjecture that A. [illegible] κινοῦν ᾗ ὀρέγεται, καὶ ἡ κίνησίς τις (or simply [illegible] Then [illegible] = τὸ ὀρεκτικόν. I fully endorse [illegible] τὸ ὀρεκτικόν et moveat et moveatur, hoc loco noluit [illegible] explicavit vero quomodo moveatur. [illegible] is quite in accord with [illegible] *Phys.* VIII. 3, 254 a 26-[illegible], since all mental activities involve [illegible] However, to prevent any misconception, ἡ ἐνέργεια is [illegible] If the genuine text were what I conjecture, [illegible] but the fatal change of ᾗ κίνησις to ἡ κίνησις would

be very likely to lead to the further change of ἡ κίνησίς τις ὄρεξις into ἡ ὄρεξις κίνησίς τις: and similarly of τὸ κινοῦν into τὸ κινούμενον and in turn to τὸ ὀρεγόμενον. But the further question arises: in what way has A. proved his point that the appetent faculty is moved, where we ought to understand "with spatial motion"? For in a chain of moved movents mediating between the first cause of the system and that which is merely moved without imparting the motion to anything else the motion transmitted ought to be of the same species throughout. Hence the use of the terms κινοῦν ἀκίνητον, κινοῦν καὶ κινούμενον, κινούμενον μόνον, which is quite in place 416 b 25 sqq., and 434 b 29 sqq., where physical bodies are spoken of, seems only permissible here by way of analogy. The motion which appetency imparts is spatial motion, but the motion with which it is moved cannot be of this nature. According to Simplicius, Alex. Aphr. met this objection by affirming that τὸ ὀρεκτικὸν is moved with spatial motion merely κατὰ συμβεβηκός, following strictly 408 a 30—34: cf. Simpl. 302, 28—30. This is exactly what we should expect, when we compare Alex. Aphr. *De An.* 78, 24—80, 3, where he emphatically asserts that the appetitive soul κινεῖ τὸ ζῷον οὐ κινουμένη and that, even when the phrase ὑπό τινος κινεῖσθαι is less strictly applied to τὸ κατ' αὐτὸ [int. τὸ κινοῦν] κινούμενον, this vague sense applies to the animal, which is moved κατὰ τὴν ψυχήν, κατὰ τὸ ἔμψυχον εἶναι, but not to the soul or any part of the soul. Them. also understood κινούμενον, as well as κινοῦν, of spatial motion: (120, 30 H., 221, 16 Sp.) αὕτη γὰρ [int. ἡ ὄρεξις] κινεῖ τὰ ζῷα κινηθεῖσα ὑπὸ τοῦ ἀγαθοῦ· ἡ γὰρ κίνησις ἡ κατὰ τόπον οὐδὲν ἄλλο ἐστὶν ἢ τῆς ὀρέξεως εἰς τοὐμφανὲς πρόοδος καὶ ἐνέργεια. I agree with Heinze, the latest editor of Them., that this paraphrase points to the reading ἡ κίνησις ὄρεξίς τίς ἐστιν. The spatial motion of the animal, Them. argues, is the appetency realised in act. What then? The animal moves spatially, but the appetent faculty can only be said to do so *per accidens*. Plutarch of Athens, as reported by Simplicius, explained κίνησις as exactly equivalent to ὀρεκτικὴ ἐνέργεια, thus making the movement attributed to appetency a mental act, and not spatial motion at all: Simpl. 302, 25 ὁ Πλούταρχος οὕτως ἐξηγεῖται, αὐτὴν τὴν ὀρεκτικὴν ἐνέργειαν κίνησιν εἰρῆσθαι Πλατωνικῶς φάμενος ὑπὸ τοῦ Ἀριστοτέλους νῦν. Simpl. (302, 23—303, 2) and Philop. (591, 12—19) accept this way out of the difficulty, but the former with considerable qualifications, suggesting (302, 37 sq.: cf. 302, 26 sq.) that the ὄρεξις may be called κίνησις because it is an actuality terminating in κίνησις, and again (302, 27 sq.) that A. uses κίνησις, not for the passive state of being moved, but for the active function of causing motion.

b 18. τὸ δὲ κινούμενον τὸ ζῷον. The animal as a whole, and not regarded as an appetent subject, corresponds to the third term of the series, that which receives, but does not communicate, motion.

b 19. ἤδη seems to imply that up to this point A. has been dealing with mental activity.

b 19. σωματικόν. In the bodily instrument employed by ὄρεξις, the faculty of soul, A. finds a fresh example of τὸ κινοῦν καὶ κινούμενον: but, whereas ὄρεξις is wholly psychical, the bodily instrument is wholly corporeal. Thus good or apparent good moves the faculty of ὄρεξις, the latter moves the bodily instrument, and this in turn sets the animal in motion. Cf. *De Gen. An.* II. 6, 742 a 22 δύο δὲ διαφορὰς ἔχει καὶ τὸ οὗ ἕνεκα· τὸ μὲν γάρ ἐστιν ὅθεν ἡ κίνησις, τὸ δὲ ᾧ χρῆται τὸ οὗ ἕνεκα. λέγω δ' οἷον τό τε γεννητικὸν καὶ τὸ ὀργανικὸν τῷ γενομένῳ· τούτων γὰρ τὸ μὲν ὑπάρχειν δεῖ πρότερον, τὸ ποιητικόν, οἷον τὸ διδάξαν τοῦ μανθάνοντος, τοὺς δὲ αὐλοὺς ὕστερον τοῦ μανθάνοντος αὐλεῖν· περίεργον γὰρ μὴ ἐπισταμένοις αὐλεῖν ὑπάρχειν αὐλούς. The Greek commentators identify this

σωματικόν, this corporeal instrument, with connatural spirit, σύμφυτον πνεῦμα: Them. 121, 3—18 H., 221, 26—222, 17 Sp., Simpl. 303, 31 sqq., Philop. 587, 24—589, 26, no doubt following *De Motu An.* c. 10, 703 a 9—28. For the part assigned by A. to σύμφυτον πνεῦμα in sensation and the transmission of sense-images see Beare, *Greek Theories*, pp. 333—336.

b 19 διὸ ἐν τοῖς κοινοῖς...20 περὶ αὐτοῦ. Cf. *De Part. An.* I. 3, 643 a 35 sqq. Philop. thinks the reference is to *Hist. An.*: Trend., arguing from the cross reference in *De Motu An.* 6, 700 b 4 περὶ μὲν οὖν ψυχῆς, εἴτε κινεῖται ἢ μή, καὶ εἰ κινεῖται, πῶς κινεῖται, πρότερον εἴρηται ἐν τοῖς διωρισμένοις περὶ αὐτῆς, concludes that A. intended to treat of the subject in a separate treatise. The treatise which has come down to us in the Aristotelian corpus is generally believed to be a later Peripatetic compilation.

b 21 νῦν δὲ...22 γιγγλυμός. The mechanism of animal motion is here given in outline. We may profitably compare the fuller treatment in *De Motu An.*, especially c. 1, 698 a 14—b 4, c. 7, 701 a 36—b 32, c. 8 throughout, 701 b 33—702 b 11, from which Them. supplements his paraphrase. All animal movement is by pushing and pulling. This implies a fixed central point from which the moveable member works backward and forward to push and pull the creature along. Thus with the elbow joint the upper part of the arm, being stationary, moves the lower part up and down. The elbow joint serves as a sort of fixed centre from which to work, where the stationary ἀρχή and the moveable τελευτή meet. They form one complex whole, being one and the same, locally or in magnitude inseparable, yet different logically or in aspect. Cf. *De Part. An.* II. 9, 654 a 35 ἵνα χρῆται ἡ φύσις [int. τῷ ὀστῷ] καὶ ὡς ἑνὶ καὶ συνεχεῖ καὶ ὡς δυσὶ καὶ διῃρημένοις πρὸς τὴν κάμψιν, *Metaph.* 1016 a 12—17.

b 21. τὸ κινοῦν ὀργανικῶς ὅπου. Cf. Them. 121, 5 H., 221, 28 Sp., who supplies θετέον: ἐν τοιούτῳ θετέον μέρει τοῦ σώματος, ἐν οἵῳ δύναιτο ἂν καὶ ἀρχὴ καὶ τελευτὴ τὸ αὐτὸ εἶναι, λόγῳ μὲν ἕτερα ὄντα μεγέθει δὲ ἀχώριστα.

b 22. ἀρχὴ καὶ τελευτὴ τὸ αὐτό. By ἀρχή is meant the stationary point or pivot, τὸ ἠρεμοῦν, by τελευτή that which is moved, ὃ κινεῖται. In the hinge-joint, say of the elbow, the concave surface or socket is the pivot and relatively at rest. The convex surface, or ball fitted in the socket, is left free to move. As motion begins from the concave and terminates in the convex, the former is called ἀρχή and the latter τελευτή.

b 22. οἷον ὁ γιγγλυμός, "for instance, the hinge-joint." The term is found in the Hippocratean writings 411, 12 (p. 111 ed. Kühn) in the tract περὶ τόπων τῶν κατ' ἄνθρωπον. We there find πρὸς δὲ τὸ γόνυ τὸ ὀστέον τοῦ μηροῦ τοιόνδ' ἐστὶ δίκραιον. τῷ δὲ δικραίῳ τούτῳ τὸ ὀστέον ἡ κνήμη καλεομένη οἷον ἐν γιγγλυμῷ ἐνήρμοσται. In *Hist. An.* IV. 4, 529 a 32 τὸ γιγγλυμῶδες is the hinge of the bivalves, a species of shellfish: τὰ δὲ δίθυρα ἐν τῷ γιγγλυμώδει [int. τὴν μήκωνα ἔχει]. The more common term with A. is καμπή, *Metaph.* 1040 b 12 τῷ ἀρχὰς ἔχειν κινήσεως ἀπό τινος ἐν ταῖς καμπαῖς. Alex. Aphr., as we learn from Simplicius 304, 12 sq., explained as follows ὅτε περὶ μίαν περόνην ἑστῶσαν κρίκος περικείμενος αὐτῇ εἴσω τε καὶ ἔξω στρεφομένη τῇ θύρᾳ συνεργεῖ. Consequently Alex. treated the words immediately following, 433 b 24 sq., as parenthetical: (Simpl. 304, 26) οὐκ ἀκούει ὡς ἐπὶ τοῦ γιγγλυμοῦ τὰ ἐφεξῆς ἐπαγόμενα, τὸ ἀχώριστα εἶναι τῷ μεγέθει τὴν ἀρχὴν καὶ τὸ τέλος, καὶ τὸ ἠρεμοῦν καὶ κινούμενον, ἀλλ' ὡς ἐπὶ ἡμῶν ταῦτα εἰρῆσθαι, ὅταν τῶν ἀντικειμένων μερῶν, λέγω δὲ τῶν ἄνω καὶ κάτω ἢ τῶν δεξιῶν καὶ ἀριστερῶν καμπτομένων, καὶ θατέρου μένοντος τῶν ἀντικειμένων, θατέρου δὲ κινουμένου, ἡ μεταξὺ ἐπιφάνεια ὡς πέρας μὲν τοῦ κινουμένου <κινουμένη> ᾖ καὶ αὐτή. Plutarch (ap. Simpl. 304, 9 sqq.) understood by γιγγλυμὸς in the present context δύο κρίκων συμπλοκή, τοῦ ἑτέρου εἰς τὸν λοιπὸν ἐμβεβλημένου, ὅτε τὸ κυρτὸν τοῦ ἑτέρου τοῦ κοίλου ἐφάπτεται τοῦ

λοιποῦ. Philop. follows Plutarch, but substitutes ὀστῶν for κύκλων: [illegible] γιγγλυμὸς δέ ἐστι σύνταξις δύο ὀστέων, τοῦ κυρτοῦ ἐμβάλλοντος εἰς τὴν κοιλότητα· καὶ ταῦτα μὲν τῷ λόγῳ διάφορά ἐστιν (ἐν ἄλλῳ γὰρ σώματι ἔστι τὸ κυρτὸν καὶ ἐν ἄλλῳ τὸ κοῖλον) τῷ δὲ ὑποκειμένῳ τὰ αὐτά εἰσιν· συνημμένα γὰρ ἀλλήλοις. καὶ γίνεται ἡ κίνησις οὐ τῶν δύο, ἀλλὰ τοῦ κυρτοῦ μόνου· περὶ τὸ κοῖλον γὰρ μένον καὶ ἀκίνητον ὂν ἡ τοῦ κυρτοῦ γίνεται κίνησις. τοιαύτη δέ ἐστιν ἡ κατ' ἀγκῶνα τῶν χειρῶν ἡμῶν διάρθρωσις.

b 24. διὸ τὸ μὲν ἠρεμεῖ τὸ δὲ κινεῖται. Prof. Bywater makes this "a mere parenthesis, a sort of corollary to what precedes." τὸ μὲν = ἡ ἀρχὴ τῆς κινήσεως, τὸ δὲ = ἡ τελευτή. Thus the upper part of the arm relatively at rest is the ἀρχὴ which moves the lower part up and down. Cf. Them. 121, 12 H., 222, 9 Sp.: περὶ γὰρ τὴν περόνην μένουσαν οἱ γιγγλυμοὶ παραλλὰξ κινοῦνται. **λόγῳ... 25 ἀχώριστα.** As Prof. Bywater has seen, this refers to τὸ κυρτὸν καὶ τὸ κοῖλον which make up the hinge-joint τὸ κινοῦν ὀργανικῶς. This implies that the two surfaces in contact are parts of one complex whole, being locally and in extension inseparable, and therefore one and the same thing. For the formula see *notes* on 429 a 11, 413 b 14: cf. also 432 a 20.

b 25. πάντα...κινεῖται. This sentence gives the reasons for the statement 433 b 21 τὸ κινοῦν ὀργανικῶς ὅπου ἀρχὴ καὶ τελευτὴ τὸ αὐτό: "it is no part of the illustrative digression on the subject of the hinge-joint, but refers back to what precedes it; and it is not to be taken as true of motion generally, but only of the motion of animals" (Bywater, Arist., *Journ. of Philol.* vol. XVII., p. 65). Cf. *De Incessu An.* 2, 704 b 22 πρὸς δὲ τούτοις ὅτι τῶν κινήσεων τῶν κατὰ τόπον ἀρχαὶ ὦσις καὶ ἕλξις. In *Phys.* VII. 2, 243 a 17 sqq. four varieties of local movement are enumerated, ὄχησις and δίνησις being added after ὦσις and ἕλξις, but (243 b 19) ὄχησις is κατὰ συμβεβηκὸς κίνησις due to one of the other three varieties and (244 a 2) δίνησις σύγκειται ἐξ ἕλξεώς τε καὶ ὤσεως. Cf. *De Mot. An.* 10, 703 a 19 τὰ δ' ἔργα τῆς κινήσεως ὦσις καὶ ἕλξις, ὥστε δεῖ τὸ ὄργανον αὐξάνεσθαί τε δύνασθαι καὶ συστέλλεσθαι.

b 26 διὸ δεῖ ὥσπερ...27 κίνησιν. The circle is supposed to be generated by the motion of a point which is always at a given distance from another fixed point, the centre of the circle. When such a circle moves, as when a wheel revolves, the centre is at rest relatively to the circumference. Similarly, both in the animal body as a whole and in the organic parts, i.e. the joints, there must be some point or pivot relatively stationary for the animal body as a whole: this was to A. the heart. Cf. *De Part. An.* III. 3, 665 a 10 ἡ μὲν γὰρ καρδία ἐν τοῖς ἔμπροσθεν καὶ ἐν μέσῳ κεῖται, ἐν ᾗ τὴν ἀρχὴν φαμεν τῆς ζωῆς καὶ πάσης κινήσεώς τε καὶ αἰσθήσεως, *De Mot. An.* I. 698 a 14 sqq., Them. 121, 15 ff., 222, 13 Sp. ὥσπερ οὖν ἐν κύκλῳ μένειν δεῖ τὸ σημεῖον καὶ ἐντεῦθεν ἄρχεσθαι τῆς κινήσεως τὴν περιφέρειαν, οὕτω καὶ ἐν τῷ ζῴῳ μένειν ἀνάγκη τι ἐν τῷ μέσῳ καὶ παρὰ τούτου καὶ ἀπὸ τούτου τὴν κίνησιν γίνεσθαι τῶν μερῶν, *ib.* 121, 7 H., 222, 2 Sp. τοιοῦτος δὲ ὁ περὶ τὴν καρδίαν τόπος ἐστίν· αὕτη γὰρ ἀρχὴ καὶ τελευτὴ τῶν τε δεξιῶν καὶ τῶν εὐωνύμων καὶ τῶν ἄνω καὶ κάτω, καθ' ἃ τοῖς ζῴοις ἡ κίνησις.

b 28. ἑαυτοῦ κινητικόν. Cf. *Phys.* VIII. 2, 253 a 14 sq.

b 28. ὀρεκτικὸν δὲ οὐκ ἄνευ φαντασίας, int. ἐστί. We have been prepared for an extension of the meaning formerly given to φαντασία. In III. 3, § 13 it was connected with sensation. Now it seems as if high mental operations, such as λογισμός, imply pictorial images. But λογισμὸς is an exercise of the discursive intellect, διάνοια, and we have been told 431 a 14 that for διάνοια sensations are replaced by images: τῇ δὲ διανοητικῇ ψυχῇ τὰ φαντάσματα οἷον αἰσθήματα ὑπάρχει, 432 a 8 ὅταν τε θεωρῇ, ἀνάγκη ἅμα φαντάσματι θεωρεῖν. Cf. *ib.* a 13 ἢ οὐδὲ τἆλλα φαντάσματα, ἀλλ' οὐκ ἄνευ φαντασμάτων.

b 30. ταύτης μὲν οὖν, i.e. τῆς αἰσθητικῆς φαντασίας.

CHAPTER XI.

433 b 31—434 a 21. To take the case of imperfect or undeveloped animals, possessing only the sense of touch. What is the moving power in them? Is it or is it not possible that such creatures should possess imagination and desire? Plainly they feel pleasure and pain and, this being so, must feel desire also. How can they have imagination? We reply: the movements of these inferior creatures are so vague and indeterminate that, if they possess the power in question, it can only be in a vague and indeterminate manner [§ 1]. Images of sense are found in all animals. But rational animals have also deliberative imagination, calculation being required in the selection of means to a given end; a single standard, moreover, being necessary if we are to determine which is the greater good to pursue. Hence it is that the less perfect animals seem to be without opinion, as they do not possess that form of imagination which is based upon the syllogism and which presupposes opinion [§ 2]. Thus appetency does not imply deliberation. In the struggle with rational wish it sometimes prevails, sometimes is vanquished, under the conditions of incontinence. In fact, the higher principle has a natural supremacy and determines movement, as is illustrated by the motions of the spheres [§ 3]. The cognitive faculty is not in motion, but stationary. In the practical syllogism the major premiss is a general proposition, while the minor deals with particular facts. The major premiss is of the following form: "A person, one of such and such a character, should do such and such an act." The minor asserts: "This is such and such an act and I am of the character defined." It is this particular minor rather than the general proposition which causes us to act; yet in different ways both may be said to do so [§ 4].

433 b 31. **περὶ τῶν ἀτελῶν.** This does not mean maimed or mutilated animals (*πηρώματα*) which have not the full development of their kind, but the lowest types of animals, which are less fully developed than other kinds.

434 a 1 **πότερον...2 καὶ ἐπιθυμίαν.** It would seem as if *ἐπιθυμία* here replaced *ὄρεξις* in the narrowest sense, as the term is used in 433 a 6—14. It will be remembered that in 413 b 19—23 (cf. 413 b 8 sq.), where A.'s attention is directed even to some of the lowest forms of animal life, e.g. insecta, which live when divided, the powers of sensation, local movement, imagination and desire are attributed to them; the proof being that sensation implies pleasure and pain, while pleasure and pain imply desire (413 b 23 sq.). But in 414 b 3—16 animals which have only the sense of touch are credited with *ὄρεξις*, but their possession of *φαντασία* is reserved for future discussion, while in 415 a 10 sq. we have the definite statement that some mortal things, obviously animals from the context, do not even possess *φαντασία*, much less *λογισμός*. A.'s solution is that the doubt does not affect the existence but rather the degree and kind of imagination possessed by the lowest forms of animal life. Their movements are vague and undetermined, *κινεῖται ἀορίστως*. Cf. Simpl. 307, 9 *δοτέον οὖν ἐξ ἀνάγκης αὐτοῖς τὴν φαντασίαν, ὃ δὴ καὶ Ἀριστοτέλης συλλογίζεται διὰ τοῦ λύπην καὶ ἡδονὴν ἐνεῖναι τοῖς τοιούτοις ζῴοις.*

a 5. **καὶ ταῦτ'**, int. *φαντασια* with its *φαντάσματα* and *ὄρεξις* in its lowest form of *ἐπιθυμία*. Cf. Them. 122, 11 H., 224, 1 Sp. *φαντάζεται ἀορίστως, ὥστε ἔχει μὲν φαντασίαν, ἀδιάρθρωτον δὲ καὶ συγκεχυμένην, καθάπερ δὴ καὶ τὴν αἴσθησιν· καὶ γὰρ ταύτην ἔχει ἀτελῆ καὶ ἀόριστον.* **ἀορίστως**, cf. *Ind. Ar.* 70 b 42 "*ἀόριστον* dicitur id, quod vel nondum circumscriptum est certis finibus vel non potest

certis finibus circumscribi." Cf. Philop. 592, 29 ἀορίστως λέγει ἀντὶ τοῦ ἀσαφῶς καὶ πεπλανημένως.

a 6. ὥσπερ εἴρηται, in 433 b 29 sq.

a 7. ἡ δὲ βουλευτική, int. φαντασία. This is the third grade of imagination, distinct alike from the αἰσθητικὴ φαντασία of the normal animal and from that fainter, vaguer type of φαντασία which A. has just claimed for the lower species. **ἐν τοῖς λογιστικοῖς**, int. ζῴοις, i.e. in those that possess reason (λόγος). Deliberation is confined to man and, like other modes of discursive thought, employs pictorial images. For an instance of their application see 431 b 6 sqq. and *Eth. Nic.* 1112 b 15—20. See also *note* on 433 a 15, τῷ τέλει. In 431 b 6 sqq. the whole passage is concerned with the mental images of the type of βουλευτικὴ φαντασία so graphically described *Eth. Nic.* loc. cit. and with what is obviously an operation of διάνοια πρακτική.

a 7 πότερον γὰρ...10 ποιεῖν. I have enclosed all this in brackets in order to make clear what in my opinion is the antecedent of τοῦτο, viz. the fact that the lower animals possess imagination only in one of the two forms in which it is found in man.

a 8. λογισμοῦ ἤδη ἐστὶν ἔργον. If speculative thought involves images, they are just as indispensable to practical thought and deliberation. Cf. *De Mem.* 2, 453 a 13 καὶ γὰρ τὸ βουλεύεσθαι συλλογισμός τίς ἐστιν, *Eth. Nic.* 1112 b 11 sqq. **ἑνί**: neuter, meaning a unit or standard. Deliberation implies comparison, which is impossible if there be no fixed standard. For One in the sense of unit or standard see *imprimis Metaph.* 1052 b 11—1053 b 8.

a 9. δύναται, int. τὰ λογικὰ ζῷα, man, in virtue of possessing deliberation (433 b 3) and deliberative imagination. So Simpl. 309, 18—32, who uses masculine participles. Philop. 592, 35—593, 4 prefers to regard ἡ βουλευτικὴ φαντασία as subject. **ἕν**, int. φάντασμα.

a 10 καὶ αἴτιον τοῦτο...11 ἔχειν. The subject of ἔχειν is doubtless τὰ ἄλλα ζῷα, cf. *supra* a 6, i.e. τὰ ἄλογα ζῷα. Bywater supposes the words to have fallen out of the text, thinking it unlikely that they can be "readily supplied by the mind" at this interval. Probably to meet this difficulty M. Rodier suggests that the words (a 7) ἡ δὲ βουλευτική...(a 9) ἐκ πλειόνων φαντασμάτων ποιεῖν form a parenthesis. But see *note* on πότερον a 7 *supra*. Anyhow, what A. means to say here is clear. The lower animals seem, at first sight, to be destitute of "judgment" (δόξα) because incapable of ratiocination (συλλογισμός), and therefore unable to form images following on ratiocinations. The close connexion between φαντασία and ὑπόληψις, of which latter δόξα is a species, was emphasised 427 b 16. There is a similar statement in *Eth. Nic.* 1147 a 35 ὥστε συμβαίνει ὑπὸ λόγου πως καὶ δόξης ἀκρατεύεσθαι, οὐκ ἐναντίας δὲ καθ' αὑτήν, ἀλλὰ κατὰ συμβεβηκός—ἡ γὰρ ἐπιθυμία ἐναντία, ἀλλ' οὐχ ἡ δόξα—τῷ ὀρθῷ λόγῳ· ὥστε καὶ διὰ τοῦτο τὰ θηρία οὐκ ἀκρατῆ, ὅτι οὐκ ἔχει καθόλου ὑπόληψιν ἀλλὰ τῶν καθ' ἕκαστα φαντασίαν καὶ μνήμην.

a 11. τὴν ἐκ συλλογισμοῦ, int. φαντασίαν [not δόξαν], i.e. what has been called above τὴν βουλευτικὴν φαντασίαν and 433 b 29 τὴν λογιστικὴν φαντασίαν. From *De Mem.* 2, 453 a 13, too, cited in *note* on a 8 *supra*, we know that "syllogism" of some sort is involved in deliberation.

a 11. αὕτη δὲ ἐκείνην, int. ἔχει. Deliberative imagination implies opinion or judgment. Deliberation will issue in some conclusion, as the debate of the Homeric chiefs ended in the decision which they announced to the people: *Eth. Nic.* 1113 a 8 sq.

a 12. διὸ τὸ βουλευτικὸν οὐκ ἔχει ἡ ὄρεξις. Once more the ambiguous term ὄρεξις confronts us without the qualification which we find, e.g. in *Rhet.* I. 10,

[illegible] players were assumed and the
[illegible] the other failed to catch it
[illegible] to the [illegible] sometimes the
[illegible] in this interpretation the will
[illegible] he [illegible] moved by whichever
[illegible] and the condition
[illegible] itself is an [illegible]
[illegible] account for the case when
[illegible] interpretation of the
[illegible] object [illegible] the case of [illegible]
[illegible] rather than [illegible]
[illegible] Constitu[illegible]
[illegible] defeat the vert[illegible]

[illegible] of the celestial sphere even [illegible]
[illegible] There is no such thing [illegible]
[illegible] The sphere of the [illegible]
[illegible] moved move[illegible]
[illegible] to the same [illegible]
[illegible] it should [illegible]
[illegible] the movement [illegible]

refer to this passage. He continues *ἅτε καὶ ἀφ' ἑαυτῆς ὅλη δυναμένη ἐγείρεσθαι καὶ ὡς τὸ ἀγαθὸν σκοπὸν τιθεμένη, κατὰ φύσιν ἂν αὕτη κινοίη τὴν δευτέραν.*

a 15. ὥστε τρεῖς φορὰς ἤδη κινεῖσθαι. I take this statement as referring, like the rest, to the celestial movements. Any single planet, however irregular its motion, has but a single path, but we cannot explain its motion unless we assume at least three simultaneous component rotations, of which its single path is the resultant. The simplest assumption of Eudoxus resolved the motion of the sun and moon into three rotations. Cf. *Metaph.* 1073 b 17—21: Eudoxus supposed that the motion of the sun and moon respectively depended on three spheres, whereof the first was that of the fixed stars, the second belonged to the circle which passes through the signs of the zodiac, and the third belonged to the ecliptic, which crosses latitudinally the course of the signs. The first of these apparent motions is due to the diurnal rotation of the earth on its axis, the second to the annual revolution of the earth round the sun, the third to the inclination of the earth's axis. Cf. Zeller, l.c. I., p. 499 sqq. The fact that in *Metaph.* Λ., c. 8 A. is not content with three spheres for the sun and moon is no argument that he may not have used a current hypothesis for purposes of illustration here. If this be so, it seems idle to seek any exact correspondence between the three rotations of the sun and the tendencies or forces which alternately control the irregular motion of the *ἀκρατής*. The broad fact of similarity stands out clearly, viz. that the actual course of the sun in its orbit is very different from that which it would take if any one of the three forces acted solely upon it.

Them. in his paraphrase of the sentence adds *ἐν τῷ ἀνθρώπῳ*: 122, 2 H., 223, 18 Sp. *καὶ τρεῖς ἤδη τηνικαῦτα κινήσεις εἴποις ἂν εἶναι ἐν τῷ ἀνθρώπῳ, δύο μὲν τὰς τῶν ὀρέξεων, μίαν δὲ τὴν τοῦ ἀνθρώπου ὑπ' ἀμφοῖν ἀντισπωμένην.* Apparently he makes the three *φοραὶ* to be (1) that to which *λόγος* and (2) that to which *ἐπιθυμία* prompts and (3) that of the man who is influenced by both impulses which draw him in opposite directions. Cf. Zeller, l.c. p. 500, according to whom all the planetary spheres except the first and second, i.e. in the simplest case, that of the sun, the third alone, "were meant to explain the variations which are observable between the apparent motion of the stars and that produced by the two first spheres." Them.'s explanation, then, easily lends itself to the supposition that the three *φοραὶ* are concurrent and simultaneous, being the resolution of one irregular motion into three rotations. Simplicius, however, supposes the three *φοραὶ* to be three distinct cases of conduct, each determined by the relative preponderance of conflicting motives. He assimilates the three *φοραὶ* to (1) *ἐγκράτεια*, (2) *ἀκράτεια*, (3) *σωφροσύνη*. In (1) *λόγος* prevails, in (2) it is beaten, in both cases after a struggle, while (3) exemplifies the sway attended by no struggle which reason, *λόγος*, naturally and rightfully exerts over the passions. This is plausible, but it requires, unless the text be altered, that *ἐγκράτεια* should be read into the words *νικᾷ δ' ἐνίοτε καὶ κινεῖ τὴν βούλησιν*, which, as we have seen, M. Rodier has accordingly done. See *note supra* ad loc.

a 16. τὸ δ' ἐπιστημονικὸν...μένει. Cf. 407 a 32 sq. The variant *κινεῖ* for *κινεῖται*, found in codd. T W X, is attested by Simplicius 311, 7 *τὸ δὲ ἐπιστημονικὸν οὐ κινεῖ ἤτοι οὐ κινεῖται (διπλῆ γὰρ ἡ γραφὴ φέρεται).* It was possibly due to 432 b 26—29. A. now returns from *τὸ λογιστικὸν* or *βουλευτικόν*, as employed by the practical intellect, to *τὸ ἐπιστημονικόν*, which is purely theoretical and determines the end which the practical intellect seeks the means to attain, as explained above 433 a 14—17. The operation of *τὸ ἐπιστημονικὸν* is concerned with a general notion, *ὁρισμός*, or a universal proposition, either invariably true, *ἀεί*, or generally true, *ὡς ἐπὶ τὸ πολύ*: *Metaph.* 1039 b 32, 1003 a 15.

a 16. ἐπεὶ δ' ἡ μὲν καθόλου ὑπόληψις καὶ λόγος, i.e. *ἐπεὶ ὑπόληψίς ἐστιν ἡ μὲν*

[illegible] grammatical device [illegible] evidence produces [illegible] reasoning [illegible]

[illegible]

[illegible] provisional [illegible] judgments are [illegible] difference between them [illegible] universal [illegible] particular [illegible] universal [illegible]

[illegible] comprehension [illegible]

CHAPTER XII.

It remains to consider the part taken by the several faculties of soul in the maintenance of life; in other words, why living things are found to possess one or more of these faculties, and what is the end which each such faculty subserves. A. now proceeds to redeem his promises made, e.g. 413 b 9 sq., 414 a 1. b 33. To enquire the reason why the facts are as they are brings us to a final cause, τὸ οὗ ἕνεκα. Having assimilated the order and regularity of the natural world to human action directed towards an end (415 b 16 ὥσπερ γὰρ ὁ νοῦς ἕνεκά του ποιεῖ, τὸν αὐτὸν τρόπον καὶ ἡ φύσις), A. sees evidence of adaptation and design in the structure of animals and plants, e.g. 412 b 1—4, 432 b 17—19, 25. Every vital activity is also an activity guided by a purpose: 420 b 16—27, 432 b 15. Other passages may be adduced: 407 b 25 sq., 411 b 23, 412 a 28—b 4, 415 b 15—20, 416 b 23—25, 420 a 9—11, 424 b 22—425 a 13, 432 b 17—26. The whole treatise is pervaded with the spirit of the teleology which A. inherited from Plato's *Timaeus*. The method of enquiry in this chapter is that pursued in the *De Part. An.*, where its nature is explained in the opening chapter, especially 642 a 1—17, a 31—b 4. The oft-recurring phrases *ἀναγκαῖόν ἐστιν*, *ἐξ ἀνάγκης* are there explained to mean *ἀναγκαῖον ἐξ ὑποθέσεως*, *ὧν οὐκ ἄνευ*, necessary conditionally or for a given purpose. The end determines the conditions. The performance of a function is impossible without adequate instruments. If the axe you are making is to cut, it must be hard: thus its material, bronze or steel, is determined. So also with the body: if it is to subserve certain functions of the soul, it must be *τοιονδὶ καὶ ἐκ τοιωνδί*. Not only its parts, the several limbs, but the tissues of which they are made are determined by their functions. See *notes* on 407 b 25 *δεῖ γάρ* and 416 a 13. Similarly in the present chapter, if anything which has life is to exist at all, it must be nourished. If it is to be preserved when in contact with other things, it must have the sense of touch and, either for further protection when it is capable of locomotion or in order to develop a higher existence, it must have the other senses also, sight, hearing and smell. Obviously all this implies the conception of organic existence as a continuous and orderly development, a progression from lower to higher, in which each successive step includes all that went before; in short, precisely that conception which is unfolded in A.'s other zoological and biological works.

434 a 22—b 8. The nutritive faculty is indispensable to all living things, to plants as well as to animals, from birth to death. All alike must grow, attain to maturity and decay; and these processes necessarily imply nutrition, and therefore a nutritive capacity, in other words, a nutritive soul (§ 1). The sensitive faculty is not universally necessary. Where the body consists of only one element or where the living thing is incapable of receiving the forms of objects apart from the matter, viz. in plants, there touch and *a fortiori* all other senses must necessarily be absent (§ 2). To the animal, however, sensation is indispensable, if we once admit design in nature. Without sensation an animal capable of progressive movement would inevitably perish and thus fail to attain that perfection which it is the end of its nature to realise. Without sensation all except stationary animals would fail to procure food (§ 3). If it be argued that an animated being possessed of soul and discriminating reason, capable of progressive movement and produced by generation, may exist and yet be destitute of sensation, why, we ask, should

better either for the soul
the more be able
will not any the more
be endowed with sou

somewhat abrupt
various manifestation
vital principle mu
nutrition and grow
must be present where
the
the other faculties
between
name

αὐτῶν ἐγγὺς ἁπλοῦ καὶ οὐχ οἷόν τε δέχεσθαι τὸ εἶδος ἄνευ τῆς ὕλης, τῆς τοιαύτης μεσότητος ἅτε ἐστερημένον καὶ πλείονος μετέχον τῆς γῆς, he correctly follows the lines laid down in 424 b 1—3. See *notes* ad loc.

a 28 [οὔτε ἄνευ...29 εἶναι ζῷον]. Them. and Philop. pass over these words. Simpl. read them, as is plain from his comment 318, 21 *τὸ οὖν οὔτε συντακτέον πάλιν λαβόντας τὸ προειρημένον τὸ "ἄνευ ταύτης (τουτέστι τῆς ἁφῆς) οἷόν τε οὐδὲν εἶναι ζῷον," καὶ τῷ ῥητῷ τούτῳ συντάξαντες καὶ τὸ ὕστατον ἐπενεχθὲν οὔτε, οὕτω τὸ λοιπὸν τῆς λέξεως ἐποίσομεν ὅσα μὴ δεκτικὰ τῶν εἰδῶν ἄνευ τῆς ὕλης, ἵνα διττὴ ἀποδοθῇ ἡ αἰτία τοῦ πάντως τὰ θνητὰ ζῷα τὴν ἁπτικὴν ἔχειν αἴσθησιν, μίαν μὲν τὴν ὅτι οὐκ ἄνευ ταύτης αἱ λοιπαί, ἑτέραν δὲ τὴν ἐπειδὴ ὅλως ζῷα ὄντα καὶ ἐπικτήτως τῶν γνωστικῶν εἰδῶν ὄντα δεκτικά (τοῦτο γὰρ τὸ μὴ ἄνευ ὕλης αἰσθητικὰ εἶναι), ἀνάγκη καὶ αἰσθητικὰ παθητικῶς*. The clause may serve as a parenthetical reminder of what has been said before 414 a 2 sq., even if it is virtually repeated 434 a 30. See further 435 a 11 sqq.

a 29 οὔτε ὅσα...30 τῆς ὕλης. See 424 b 1 quoted above.

a 30. τὸ δὲ ζῷον ἀναγκαῖον αἴσθησιν ἔχειν. The proof amounts to this; animals which move from place to place must have sensation in order to find their food, or they would inevitably perish, and then nature's design in producing them, viz. that they should come to maturity and continue their species, would be frustrated. This proof, A. admits, does not apply to zoophytes which draw their nourishment from the spot on which they grow.

a 31. εἰ μηθὲν μάτην ποιεῖ ἡ φύσις. This, the general assumption underlying the whole teleological argument, has appeared already, *ipsissimis verbis*, in 432 b 21, where see *note*. Cf. 415 b 16 sq.: Nature, like human intelligence, works to an end (*ἕνεκά του ποιεῖ*).

a 31 ἕνεκά του...32 ἢ συμπτώματα...ἕνεκά του, "all things in nature are either designed with a view to an end, or will be found to be coincidences of what is so." A. accepts the law of universal causation and in the domain of nature assumes design, wherever causality can be established. But this leaves a margin of effects strictly due to a causation which cannot be said to be designed, events which he denotes by *συμπεσεῖν* and *σύμπτωμα*. Efficient causes have always a definite object in view, but they frequently fail of its accomplishment, owing to the indiscriminate nature of the matter which they use, while at other times, owing to the same disturbing cause, they incidentally produce results which they did not originally design. Hence there arise *συμπτώματα* or *παρὰ φύσιν συμπίπτοντα*, of which A. says *De Gen. An.* IV. 10. 778 a 4 *βούλεται μὲν οὖν ἡ φύσις τοῖς τούτων* [int. *τῶν ἄστρων*] *ἀριθμοῖς ἀριθμεῖν τὰς γενέσεις καὶ τὰς τελευτάς, οὐκ ἀκριβοῖ δὲ διά τε τὴν τῆς ὕλης ἀοριστίαν καὶ διὰ τὸ γίνεσθαι πολλὰς ἀρχάς, αἳ τὰς γενέσεις τὰς κατὰ φύσιν καὶ τὰς φθορὰς ἐμποδίζουσαι πολλάκις αἴτιαι τῶν παρὰ φύσιν συμπιπτόντων εἰσίν.* Such events in nature are parallel to the effects of chance, *τύχη*, in human agency. Cf. *Phys.* II. 5, 196 b 17 *τῶν δὲ γινομένων τὰ μὲν ἕνεκά του γίγνεται, τὰ δ' οὔ· τούτων δὲ τὰ μὲν κατὰ προαίρεσιν, τὰ δ' οὐ κατὰ προαίρεσιν, ἄμφω δ' ἐν τοῖς ἕνεκά του, ὥστε δῆλον ὅτι καὶ ἐν τοῖς παρὰ τὸ ἀναγκαῖον καὶ τὸ ὡς ἐπὶ πολὺ ἔστιν ἔνια περὶ ἃ ἐνδέχεται ὑπάρχειν τὸ ἕνεκά του. ἔστι δ' ἕνεκά του ὅσα τε ἀπὸ διανοίας ἂν πραχθείη καὶ ὅσα ἀπὸ φύσεως. τὰ δὴ τοιαῦτα ὅταν κατὰ συμβεβηκὸς γίνηται, ἀπὸ τύχης φαμὲν εἶναι.* *Ταὐτόματον* is a wider conception than *τύχη*, as the latter is restricted to undesigned results following upon purposed action (*προαιρετόν*). Cf. *Phys.* II. 6, 197 b 1 sqq. Hence *Metaph.* 1032 a 12 *τῶν δὲ γιγνομένων τὰ μὲν φύσει γίγνεται, τὰ δὲ τέχνῃ, τὰ δ' ἀπὸ ταὐτομάτου*, ib. a 29 *τούτων δὲ* [int. *τῶν ποιήσεων*] *τινες γίγνονται καὶ ἀπὸ ταὐτομάτου καὶ ἀπὸ τύχης παραπλησίως ὥσπερ ἐν τοῖς ἀπὸ φύσεως γιγνομένοις.* Thus a "contingent" or "accidental" event is caused by the diversion of free or

notes on 406 a 14, 415 b 18. It is, then, the animal's own nature which works to an end and realises itself when the animal comes to maturity or fulfils its purpose. Cf. also *De Gen. An.* II. 1, 731 b 32 ἡ φύσις τοῦ τοιούτου γένους cited p. 341 in *note* on 415 b 6: also *De Gen. et Corr.* II. 6, 333 b 16 τῶν δὴ φύσει ὄντων αἴτιον τὸ οὕτως ἔχειν, καὶ ἡ ἑκάστου φύσις αὕτη. **πῶς γὰρ θρέψεται**; Int. τὸ πορευτικὸν ζῷον μὴ ἔχον αἴσθησιν. It will not find nourishment on the spot, like plants and stationary animals: Them. 123, 5 H., 225, 13 Sp. οὐ γὰρ ἔγγυθεν ἔχει τὴν τροφὴν ἐπιρρέουσαν, οὐδὲ ἐκ τῶν στοιχείων, ἐν οἷς ἐσπάρη καὶ ἐφυτεύθη, ἀλλὰ δεῖ πορίζεσθαι αὐτὰ καὶ μετιέναι.

b 2. **τοῖς μὲν γὰρ μονίμοις**, not only plants (*De Part. An.* II. 10, 656 a 1), but stationary animals (*ib.* IV. 5, 681 b 34), as ὀστρακόδερμα, zoophytes, e.g. sponges and sea-anemones. Cf. 410 b 19, where see *note*.

b 2. **ὑπάρχει τὸ ὅθεν πεφύκασιν**. Supply εἰς τροφὴν understood from πῶς γὰρ θρέψεται; *De Gen. An.* III. 11, 762 b 12 τροφὴ δ' ἐστὶ τοῖς μὲν ὕδωρ καὶ γῆ, τοῖς δὲ τὰ ἐκ τούτων, ὥσθ' ὅπερ ἡ ἐν τοῖς ζῴοις θερμότης ἐκ τῆς τροφῆς ἀπεργάζεται, τοῦθ' ἡ τῆς ὥρας ἐν τῷ περιέχοντι θερμότης ἐκ θαλάττης καὶ γῆς συγκρίνει πέττουσα καὶ συνίστησιν. It appears, then, that ὅθεν πεφύκασιν must be γῆ καὶ ὕδωρ, the stationary animals being confined to the water, *Hist. An.* I. 1, 487 b 7 ἔστι δὲ τὰ μόνιμα ἐν τῷ ὑγρῷ, τῶν δὲ χερσαίων οὐδὲν μόνιμον. The same principle applies to higher forms of life; in vermiparous, oviparous and viviparous animals the surplus material (τὸ λειπόμενον) beyond that which is drawn upon in the process of generation is reserved for the sustenance of the immature offspring, while it is unable to provide for itself. Cf. *De Gen. An.* II. 1, 732 a 25 sqq., III. 11, 763 a 9 sqq., III. 2, 752 b 19 sqq., *Pol.* 1256 b 10 sqq., 1258 a 23 καὶ τροφὴν τὴν φύσιν δεῖ παραδοῦναι γῆν ἢ θάλατταν ἢ ἄλλο τι, *ib.* a 35 φύσεως γάρ ἐστιν ἔργον τροφὴν τῷ γεννηθέντι παρέχειν· παντὶ γὰρ ἐξ οὗ γίνεται, τροφὴ τὸ λειπόμενόν ἐστιν.

b 3 **οὐχ οἷόν τε δὲ σῶμα...4 γεννητὸν δέ**. The subject of this clause, σῶμα μὴ μόνιμον ὄν, γεννητὸν δέ, is practically equivalent to πᾶν σῶμα πορευτικὸν of a 33. In both σῶμα must be taken as σῶμα φυσικὸν in the limited sense, μετέχον ζωῆς, and, as A. did not recognise climbing plants, in the still more limited sense of animal. The clause asserts that such a ζῷον cannot be a ζῷον ἔμψυχον by the possession of the higher intellectual faculty (νοῦς κριτικός) without possessing the lower faculty of sense. This case would seem to be covered by the general rule laid down 415 a 8 sq., where the insertion of τῶν φθαρτῶν is significant. Torstrik however appeals to 432 a 7 καὶ διὰ τοῦτο οὔτε μὴ αἰσθανόμενος μηθὲν οὐθὲν ἂν μάθοι οὐδὲ ξυνίοι and *De Sensu* 6, 445 b 15 τίνι κρινοῦμεν ταῦτα ἢ γνωσόμεθα; ἢ τῷ νῷ. ἀλλ' οὐ νοητά, οὐδὲ νοεῖ ὁ νοῦς τὰ ἐκτὸς μὴ μετ' αἰσθήσεως ὄντα. Both passages relate exclusively to the human mind. Whatever view be taken of the genuineness of the succeeding clause, there can be no doubt that the carefully-worded description of our lemma is intended to exclude, not only plants, but also τὰ οὐράνια, τὰ ἀΐδια τῶν αἰσθητῶν, i.e. the stars, which are κινητά, but at the same time are ἀΐδια or ἀγένητα.

b 4. [**ἀλλὰ μὴν οὐδὲ ἀγένητον**]. This clause was read by Alex. Aphr. and in some of the copies known to Simpl., whose words are: (320, 28) ἐν τισι δὲ ἀντιγράφοις πρόσκειται τὸ ἀλλὰ μὴν οὐδὲ ἀγένητον, ὅπερ ὁ μὲν Πλούταρχος ἐξηγεῖται, ὡς νῦν τοῦ Ἀριστοτέλους καὶ τοῖς οὐρανίοις ἀποδιδόντος αἴσθησιν· οὐδὲ γὰρ τὰ ἀγένητα, διότι μὴ καθ' ἑαυτὰ τόπον ἐκ τόπου ἀμείβοντα καὶ διὰ τοῦτο μόνιμα ὄντα, ἀμοιρεῖν αἰσθήσεως. φαίνεται δὲ ὁ Ἀριστοτέλης μηδαμοῦ τὴν αἴσθησιν ἐπὶ τῶν οὐρανίων προσιέμενος, ἀλλὰ καὶ ἐφεξῆς αὐτὸ τοῦτο ἀναιρούμενος. διὸ κάλλιον, οἶμαι, ὁ Ἀλέξανδρος ἐξηγεῖται τὸ ἀλλὰ μὴν οὐδὲ ἀγένητον, ἀξιῶν ἀκούειν πρὸς τὸ αἴσθησιν ἔχειν, ἵνα μὴ πρὸς τὸ προσεχῶς εἰρημένον ᾖ ἐπαγόμενον, πρὸς τὸ οὐχ οἷόν τε σῶμα ἔχειν μὲν ψυχήν, αἴσθησιν δὲ μὴ ἔχειν, ἀλλὰ πρὸς τὸ ἐξ ἀρχῆς τὸ "αἴσθησιν δὲ οὐκ

[illegible] ... [illegible]. This Alex. Aphr. connects the words [illegible] ... supplying [illegible]. Then the interjected parenthesis separates two closely connected clauses beginning with [illegible], and the introduction of [illegible] is extremely abrupt. Plutarch on the other hand defended the clause at the same time maintaining that the heavenly bodies do [illegible] sensation and [illegible], whereas Alex. Aphr. read there [illegible]. See Philop. 135, [illegible]. If the clause be inserted (see critical notes) or composed in accordance with Alex. Aphr.'s suggestion, it will be necessary to understand [illegible] of the same subject as before. [illegible] Simpl. and Themist. have so explained them, although there is a little awkwardness in saying that the possession of soul and discriminating intelligence without sensation is better for the soul. Even if the clause be retained, it might still be regarded as a parenthesis, and [illegible] be understood in the same way [illegible]. But there would be a natural tendency to make [illegible] the subject. Cf. Them. 123, 24—32 [illegible] 120, 2—22 [illegible], and as Philop. [illegible] Alex. and Plut. also did. See Philop. 345, [illegible]—400, 12 for Alex. Aphr. and 346, [illegible] for Plutarch.

35. [illegible]. The meaning to be given to this rhetorical question and also the sequel as far as [illegible] will depend upon the view taken of the preceding clause. Alex. Aphr., followed in the main by Them. and Philop., retaining the impugned clause, interprets it as arguing that sensation is not required by [illegible], for its possession will not improve their rational souls or their bodies. Cf. Philop. 345, [illegible]. 2. The weak point here is that, as Simpl. expressly testifies, Alex. Aphr., having supplied [illegible] after [illegible], goes on to supply [illegible] with the question. So that, if the correctness of the first supplement be successfully challenged, the latter is not likely to be maintained.

Plutarch opposed Alex. on the issue of fact, whether in this system the [illegible], perhaps we should say more precisely, the spirits which move the spheres, assumed as necessary for the explanation of the movements of the stars and planets, have or have not the faculty of sense. Alex. Aphr. denied it, Plutarch affirmed it, and in justice to him it should be remarked that, apart from the present passage, there is nothing in his writings which contradicts his view. Plutarch accordingly read [illegible]; whether he inserted [illegible] on his own conjecture we are not informed. The reading, however it originated, appears in five of our MSS., and unfortunately we have not [illegible]. Thus, reading [illegible], Plutarch can interpret the arguments which follow the question as urged in support of the view that it is better both for the souls and bodies of the stars that they should have sensation. Sensitivity is better than its absence and the perceptions of the heavenly bodies are not, like ours, dependent upon [illegible], so as to infringe upon their impassivity and immortality. Nor will it be a hindrance to their thought, for the particulars of sense lead up to the universal, and sense in them need not disturb reason as in us. Philop. [illegible], 12—[illegible].

Simplicius confines the argument to the non-stationary generated body of the animal. We must then supply [illegible], and so I have translated. Why should the non-stationary generated body have soul and discriminating reason without having sense? As the [illegible] clause is the more important, the reading [illegible] would naturally arise and we need not suppose Plutarch to have arbitrarily altered the text;

Suppose, then, a case of this kind: a non-stationary body, i.e. not a plant, but generated, i.e. not one of the *οὐράνια*. If any one maintains that it is possible for such a body to have reason without having sensation, he must maintain that the absence of sensation is better either for the soul or for the body of the animal, which is a compound of the two: Simpl. 320, 11 *καὶ γὰρ ἡ λογικὴ ψυχὴ οὐκ ἄλλως πρὸς τὸ νοεῖν ἡ ὅλη πρὸς σῶμα ῥεύσασα ἐγείρεται, εἰ μὴ δι' αἰσθήσεως τὴν πρώτην, καὶ ἐν ταῖς πράξεσι συνεργῷ αὐτῇ* [int. *αἰσθήσει*] *καὶ τῇ ἀπ' αὐτῆς χρῆται φαντασίᾳ, καὶ τὸ σῶμα οὐ διὰ τοῦ νοῦ μόνου, ἀλλὰ καὶ δι' αἰσθήσεως σώζεται τῆς τοδὶ μὲν βλαβερὸν αὐτῷ δεικνυούσης, τοδὶ δὲ σωτήριον.*

This argument Torstrik puts tersely and cogently: quem ad finem corpus quod nec plantae est nec sideris (de his enim non agitur), quum careat sensu, animam habeat et intelligentiam ad res oblatas discernendas? Ponamus enim quod negamus, carere sensu, praeditum esse intelligentiâ, aut profecto ea animam iuvabit aut corpus (*ἢ τῇ ψυχῇ βέλτιον ἢ τῷ σώματι*). At neutrum verum est (*νῦν δ' οὐδέτερον*). Si animam dicis iuvari intelligentiâ, falleris: nihilo enim magis intelliget (*ἡ μὲν γὰρ οὐ μᾶλλον νοήσει*), sive habet sive non habet intellectum: sensum enim non habet, at nihil est in intellectu quod non fuerit in sensu:...Sin corpus putas intellectu iuvari, iterum falleris: corpus enim nihilo magis vitam suam (cf. b 14 et 26 *εἰ μέλλει σώζεσθαι τὸ ζῷον* et 17 *ἀδύνατον ἔσται σώζεσθαι τὸ ζῷον*) servabit (*τὸ δ' οὐθὲν ἔσται μᾶλλον*), propterea quod in intellectu practico minor propositio semper singulas res sibi subicit (434 a 16—21): at harum cognitione privata erit, siquidem sensu caret. (Cf. *De Sensu et Sens.* 1, 436 b 18—437 a 3.)

b 5. **βέλτιον.** What is the subject? Torstrik apparently thought *νοῦς κριτικός* (intelligentia, ea: see the citation in previous *note*). I have taken it to be *τὸ μὴ ἔχειν αἴσθησιν*, or rather the whole clause *τὸ ἔχειν μὲν ψυχὴν καὶ νοῦν κριτικόν, αἴσθησιν δὲ μὴ ἔχειν.* Either view makes the meaning clear, and the fact that two views are possible would quite sufficiently account for the variant b 5 *οὐχ ἕξει.* For the teleological assumption cf. 407 b 9—11.

b 6. **νῦν δ' οὐδέτερον.** Torst. would understand *ἀληθὲς* or *οἷόν τε*, but surely *ἔστιν* is enough. Cf. 423 b 4 *τὸ δ' οὐκ ἔστιν*, 434 b 27 *τοῦτο δ' ἂν εἴη.* **ἡ μὲν,** i.e. *ἡ ψυχή.*

b 7. **τὸ δ',** i.e. *τὸ σῶμα.* **δι' ἐκεῖνο,** i.e. owing to the possession of reason unaccompanied by sense. **οὐθὲν ἄρα...ἄνευ αἰσθήσεως.** The conclusion established is that a body never has life without sensation, unless it be stationary. The exception certainly includes plants and possibly the stars, which Alex. Aphr. regarded as stationary because fixed in their revolving spheres. This conclusion follows from the two premises (1) that sensation is necessary to preserve animals with the power of locomotion from destruction, and (2) that the rational soul in non-stationary and generated animals implies sensation.

434 b 9—24. The body of the animal may conceivably be either simple or composite, i.e. may consist of one element or be compounded of several. If, however, it is to possess sensation, it must be composite, for, if constituted of a single element, it would not have the indispensable sense of touch. Touch the animal must possess, if it is to preserve itself in safety, since by touch alone it perceives tangible objects, i.e. all bodies with which it may come in contact, whereas the other senses perceive through media distinct from themselves. Unless, therefore, it has touch, it will be unable, when it comes into contact with other bodies, to avoid some and take others (§§ 5, 6). Hence taste is a special form of touch. Food, the object of taste, is a tangible body, no nutriment being derived from colours, sounds or odours: and therefore taste, the sense which has for its object what is not only tangible but nutritive

as well, must be a variety of touch. Thus taste and touch are the two indispensable senses, and without touch no animal can exist [§ 7].

434 b 9 ἀλλὰ μὴν εἴγε αἴσθησιν ἔχει...10 μικτόν. Whether the animal possesses sensation or not, it will still be true that the body must be either simple or compound. The meaning is, therefore, "taking the case of those animals which possess sensation, let us consider the constitution of their bodies. The body must consist of a single element or be compounded of more than one element."

b 10. ἁφὴν γὰρ οὐχ ἕξει, as shown above 434 a 27 sq., 423 a 11 sqq. **ἔστι δὲ ἀνάγκη ταύτην ἔχειν.** Cf. above 414 a 3.

b 11. τοῦτο, i.e. *ὅτι ἀνάγκη τὴν ἁφὴν ἔχειν.* **ἐκ τῶνδε,** "from the following considerations," viz. 434 b 11—24. **ἐπεὶ γὰρ...14 τὸ ζῷον.** Since it is a body, the animal must come in contact with other bodies near it and must have the discriminating power of touch, if it is to preserve itself: Them. 124, 1 H., 227, 3 Sp. *ἐπεὶ γὰρ τὸ ζῷον σῶμα ἔμψυχόν ἐστι, σώματι δὲ ὄντι αὐτῷ ἀνάγκη ἅπτεσθαι τῶν πελαζόντων σωμάτων, ἀνάγκη διὰ τοῦτο τῷ ζῴῳ καὶ ἁπτικῷ εἶναι καὶ κρίνειν τό τε οἰκεῖον καὶ τὸ ἀλλότριον, εἰ μέλλοι σῴζεσθαι.*

b 12. ἅπαν ἁπτόν. Here we must stretch the meaning of "tangible" to mean "capable of touching, i.e. coming in contact with" other bodies, whether the simple contact is or is not attended by sensation. The same wider meaning is required elsewhere, e.g. *infra* b 18—22.

b 15. δι' ἑτέρων, "through other things as media." In the case of the telepathic senses the media are distinct from the organs. Cf. 423 b 4—6, 14, 424 b 29.

b 17. εἰ δὲ τοῦτο, i.e. *εἰ μὴ δυνήσεται τὰ μὲν [βλαβερὰ] φεύγειν τὰ δὲ [ὠφέλιμα] λαβεῖν.*

b 18. διό, because *αἰσθητὸν ἁφῇ τὸ ἁπτόν,* this being implied in what precedes or inferred from b 12 *convertendo.* This suggestion is due to Miss Alford. Cf. 424 b 27 *ὅσων μὲν αὐτῶν ἁπτόμενοι αἰσθανόμεθα, τῇ ἁφῇ αἰσθητά ἐστιν.* The syllogism then runs: whatever is tangible is perceptible by touch; food is tangible; ergo, food is perceptible by touch. Hence taste, the sense which has to do with the nutritive species of what is tangible, is a variety of touch.

b 22. τοῦ ἁπτοῦ καὶ θρεπτικοῦ, i.e. *τροφῆς,* which is said b 19 to be *τὸ σῶμα τὸ ἁπτόν.* Cf. the similar use of *θρεπτικὸν* in *De Sensu* 1, 436 b 17 *ὁ χυμός ἐστι τοῦ θρεπτικοῦ πάθος, ib.* 5, 445 a 30 *ὅπερ ὁ χυμὸς ἐν τῷ θρεπτικῷ καὶ πρὸς τὰ τρεφόμενα,* a 8 *διὸ καὶ τὸ ὀσφραντὸν τῶν θρεπτικῶν ἐστὶ πάθος τι (ταῦτα δ' ἐν τῷ ἁπτῷ γένει).* On the point whether food itself, *τὸ σῶμα τὸ ἁπτόν,* or its flavour is more properly called the object of taste see 422 a 10 *τὸ σῶμα ἐν ᾧ ὁ χυμός, τὸ γευστόν, note.* **αὗται μὲν οὖν,** the senses of touch and taste.

434 b 24—435 a 10. The other senses exist in order to well-being; they are found in certain species and not in all animals indiscriminately. An animal capable of progression must have them in order to escape destruction; for it must be aware of objects, not only when in contact with them, but also from a distance. To ensure this, it must be capable of perceiving through a medium, the object affecting the medium and the medium the percipient [§ 8]. The transmission of the modification which occurs in sense-perception through media is similar to the transmission of spatial motion. The first moving cause propels without being propelled, the last member in the series is propelled only and does not propel, the numerous other members both propel and are propelled. The qualitative change or modification which occurs in sense-perception is also a movement, propagated, like the movement of translation, but the movent, i.e.

the sensible object, acts upon the percipient, the subject of the modification without displacing it. Different bodies exhibit great diversity in the propagation of movements or impressions, wax being affected more than stone, but less than water, and still less than air. Air, the medium of sight and hearing, is eminently mobile, receiving and communicating impressions so long as it remains an unbroken whole. Hence, as regards the reflexion of light, the theory that vision issues as a stream of fire from the eye and undergoes reflexion [Plato, *Timaeus* 46 A] is less satisfactory than that which makes the form and colour of objects affect the air and this air itself in turn affect the eye. If the surface on which the air impinges be smooth, the image remains unbroken, much as if the mark of a seal upon wax penetrated to the other side of the wax [§ 9].

434 b 24. αἱ δὲ ἄλλαι, int. *αἰσθήσεις*, viz. *ὄψις, ἀκοή, ὄσφρησις*. **τοῦ τε εὖ ἕνεκα.** Similarly the use of the tongue, not for taste, but for speech, is *ἕνεκα τοῦ εὖ* 420 b 17—20. Complexity of structure attends such higher developments, *De Part. An.* II. 10, 656 a 3 *τὰ δὲ πρὸς τῷ ζῆν αἴσθησιν ἔχοντα πολυμορφοτέραν ἔχει τὴν ἰδέαν, καὶ τούτων ἕτερα πρὸ ἑτέρων μᾶλλον, καὶ πολυχουστέραν, ὅσων μὴ μόνον τοῦ ζῆν ἀλλὰ καὶ τοῦ εὖ ζῆν ἡ φύσις μετείληφεν.* **γένει ζῴων...25 τισίν, οἷον τῷ πορευτικῷ.** Cf. for the expression *πᾶν σῶμα πορευτικόν*, 434 a 33. This is an unequivocal statement that locomotion is not a universal attribute of animals, and accords with the recognition of stationary animals in 410 b 19, 432 b 20. **οἷον** probably means "namely" and not "for example," as it is translated on p. 159. See *De Sensu* I, 436 b 18 as cited in next *note*. The division into stationary and progressive seems fairly exhaustive.

b 26 εἰ γὰρ μέλλει...27 ἄποθεν. So *De Sensu* I, 436 b 18 *αἱ δὲ διὰ τῶν ἔξωθεν αἰσθήσεις τοῖς πορευτικοῖς αὐτῶν, οἷον ὄσφρησις καὶ ἀκοὴ καὶ ὄψις, πᾶσι μὲν τοῖς ἔχουσι σωτηρίας ἕνεκεν ὑπάρχουσιν, ὅπως διώκωσί τε προαισθανόμενα τὴν τροφὴν καὶ τὰ φαῦλα καὶ τὰ φθαρτικὰ φεύγωσι, τοῖς δὲ καὶ φρονήσεως τυγχάνουσι τοῦ εὖ ἕνεκα.* Thus for progressive animals these telepathic senses are necessary for preservation and at the same time subservient to the higher ends of *φρόνησις*.

b 27. τοῦτο δ' ἂν εἴη, εἰ, "this will be possible, if" etc., the means required being a medium for each of these three senses, transmitting the impression or movement from the sensible object to the sense.

b 28 τῷ ἐκεῖνο...29 κινεῖσθαι. Ἐκεῖνο = *τὸ μεταξύ*, the medium, air or water, as explained in II. cc. 7—9.

b 29. αὐτὸ δὲ ὑπ' ἐκείνου. This is part of the infinitive construction, *τῷ αὐτὸ ὑπ' ἐκείνου πάσχειν καὶ κινεῖσθαι.* *Αὐτὸ* is *τὸ ζῷον ᾗ αἰσθητικὸν* and *ἐκείνου* is the medium.

b 29 ὥσπερ γὰρ...30 μέχρι του μεταβάλλειν ποιεῖ. *Μέχρι του* = *μέχρι τινός*, which, according to Torst., is intended by Bekker's *μέχρι τοῦ*. I append Torstrik's note: scripsi *μέχρι του*, violatâ encliticarum regulâ quam et Bekkerus et alii plurimi sibi scripserunt. Recte Sophonias *μέχρι τινός*. He then cites *Phys.* VIII. 5, 256 b 14—20, presumably for the sake of b 18 *δῆλον δ' ἐπὶ τῶν κατὰ τόπον κινούντων· ἅπτεσθαι γὰρ ἀλλήλων ἀνάγκη μέχρι τινός.* The change which takes place in sensation is not *φορὰ* or *κατὰ τόπον κίνησις*, but more properly *ἀλλοίωσις*: and this is illustrated (1) by *κατὰ τόπον κίνησις*, (2) by the impression of a seal on wax. A. is careful to note 435 a 1 sq. the difference between the motion of translation and the modification which constitutes sensation, viz. that in the latter case there is no displacement. It is merely the transmission of an effect through intermediaries which is the point of similarity in the two cases. Necesse est animalia non solum eo quod tangunt sed etiam procul sentiant: id autem fiet si id quod inter obiectum et sensorium medium interpositum est et patiendi et agendi vices sustinet, ut patiatur ab obiecto, agat in sensorium.

Patitur autem et agit per alterationem. Explicat hanc sententiam A. eo patiendi et agendi genere quod fit per loco motionem: haec enim nobis notior est alteratione. Si in lineâ rectâ plures pilae positae sunt, si primam pellis, secundam illa feriet, haec tertiam, et sic porro. Idem in alteratione fit, nisi quod particulae locum non mutant. Color agit in proximas aeris particulas, hae in vicinas, et sic porro: ultimae in superficiem oculi agunt, superficies in interiores oculi partes, quae sentiunt. Ad eandem rem illustrandam A. utitur sigilli et cerae exemplo: oculus ita afficitur ut charta afficeretur si cera non solum in superficie sed usque ad confinium cerae et chartae per sigillum fingeretur. Si A. novisset photographiam quam vocamus, hoc fortasse usus esset exemplo (Torst., p. 222).

b 31. καὶ τὸ ὦσαν. Torst. (p. 223) changes ὦσαν to ὠσθέν, objecting to the statement "res quae pepulit in causâ est ut alia res pellat." He continues: Manifesto enim legendum est "res pulsa" τὸ ὠσθέν. But cf. *De Insomn.* 2, 459 a 30 τὸ γὰρ κινῆσαν ἐκίνησεν ἀέρα τινά, καὶ πάλιν οὗτος κινούμενος ἕτερον. Also the general statement of the case for motion of translation through intermediaries in *Phys.* VIII. 10, 266 b 27—267 a 17, esp. 267 a 2 ἀνάγκη δὴ τοῦτο μὲν λέγειν, ὅτι τὸ πρῶτον κινῆσαν ποιεῖ οἷόν τε κινεῖν, ἢ τὸν ἀέρα τοιοῦτον ἢ τὸ ὕδωρ ἤ τι ἄλλο ὃ πέφυκε κινεῖν καὶ κινεῖσθαι. ἀλλ' οὐχ ἅμα παύεται κινοῦν καὶ κινούμενον, ἀλλὰ κινούμενον μὲν ἅμα, ὅταν ὁ κινῶν παύσηται κινῶν, κινοῦν δὲ ἔτι ἐστίν. In such cases the production of motion does not cease simultaneously with the cessation of the impulse communicated. The top set spinning goes on for a time: the gong continues to sound after the stroke has ended.

435 a 1 οὕτω <καὶ> ἐπ' ἀλλοιώσεως...2 ἀλλοιοῖ. So it is in that species of ἀλλοίωσις which we call sense-perception, except that the sensible causes modification, viz. of the sense-organ, without any displacement: A. does not say of what. As a matter of fact, there is no change of place in either (1) the sensible object or (2) the sense-organ and the percipient. Them. supposes μένοντος to refer to (1), the object: 124, 28 H., 228, 12 Sp. μένοντος ἐν τῷ αὐτῷ τόπῳ τοῦ ἀλλοιοῦντος. Philop. refers μένοντος to (2), the percipient: 605, 7 ἡ δύναμις, φησίν, ἡ κατὰ τόπον κινοῦσα οὐκ ἐᾷ ἐν τῷ αὐτῷ τόπῳ τὸ κινούμενον, τὸ δὲ αἰσθητὸν ἀλλοιοῦν τὴν αἴσθησιν ἐν τῷ αὐτῷ τόπῳ αὐτὴν ἐᾷ. The latter view is to be preferred. Even in spatial motion the first member of the series is assumed to be ἀκίνητον b 32 *supra*, so that there would be no difference in this respect between φορά and ἀλλοίωσις. The ungrammatical genitive absolute does occur in A. Cf. 420 b 26 διὸ ἀναγκαῖον εἴσω ἀναπνεομένου εἰσιέναι τὸν ἀέρα and *note*. There seems to be no reason to substitute, with Torst., the medium for the sensible object, the proximate for the ultimate efficient cause: indeed, it would be difficult to establish this immobility of the medium in the case of hearing. Cf. 419 b 25-27, b 34—420 a 2, 4—9, 25 sq., *De Sensu* 6, 446 b 8 διὰ τὸ μετασχηματίζεσθαι φερόμενον τὸν ἀέρα, *ib.* b 30 δοκεῖ δ' ὁ ψόφος εἶναι φερομένου τινὸς κίνησις. A. admits the fact that there is φορά in hearing and smelling and that the ἀλλοίωσις takes time to travel along the medium, although seeing, he contends, takes place instantaneously. See the question discussed *De Sensu* 6, 446 a 20—447 a 11.

a 3. ἐκινήθη, int. ὁ κηρός. **λίθος δὲ...4 πόρρω,** int. κινεῖται.

a 4 ὁ δὲ ἀήρ...5 ἐὰν μένῃ καὶ εἷς ᾖ. Cf. 419 b 21—420 a 2.

a 5 διὸ καὶ περὶ...8 ᾗ εἷς. Philop. detects hyperbaton: 605, 31 ἀναγνωστέον δὲ τὴν λέξιν ἐν ὑπερβατῷ οὕτω· διὸ βέλτιον τὸν ἀέρα πάσχειν ὑπὸ τοῦ χρώματος ἢ τοῦ σχήματος, ἢ ὑποτίθεσθαι τὴν ὄψιν ἐξιοῦσαν ἀνακλᾶσθαι, "it is better to suppose that the air is affected by colour or shape than to suppose" [with Empedocles and Plato, *Tim.* 45 B—46 C] "that vision issues from the eye and is reflected

back to it." Refraction, as a term of modern optical science, does not correspond with ἀνάκλασις. Torst., not recognising the hyperbaton, bracketed the words περὶ ἀνακλάσεως as a sort of marginal heading: Ferri non possunt, propterea quod non id demonstrat A. τῆς ἀνακλάσεως alterum modum alteri esse praeferendum, sed ἀνάκλασιν in hac re omnino negat esse (p. 224). Plato in his explanation of vision (*Tim.* l.c.) assumes three fires (1) that which streams from the eye, the visual current, ὄψεως ῥεῦμα, or body which sees, (2) that of daylight in the air, (3) that in the object seen, which is the cause of the visibility. The first two are homogeneous and combine into a uniform substance. This substance, meeting the rays from the visible external object, receives the motions of these rays and transmits them to the eye. This theory of vision Plato extends to the seeing of images in a mirror as follows. A mirror, owing to its smooth shining surface, arrests the rays from visible objects and brings them into contact with the visual current which has combined with the fire of daylight. Upon the coalescence of these two fires, the external fire from the object imaged and the internal fire from the eye, indirect vision takes place, i.e. the objects are seen in the mirror. See Archer-Hind *ad loc.* From the similarity of the language to that of 419 b 27—420 a 2 it is possible that A. here has echo in his mind as well as reflection of light. See *note* on 420 a 1 λεῖον.

a 8. **ἐπὶ δὲ τοῦ λείου ἐστὶν εἷς.** Smooth surfaces, such as water and polished metal (cf. 419 b 27—420 a 2 and *notes*), allow a layer of air to retain its unity and continuity, while rough unequal surfaces full of cavities and windings break up the air. **οὗτος**, int. ὁ ἀήρ.

a 9. **μέχρι τοῦ πέρατος**, through the whole depth or thickness of the wax to the other side.

CHAPTER XIII.

435 a 11—b 3. The bodies of animals cannot consist exclusively of a single element. It has been proved that, if they have not touch, they cannot have any other sense. The other elements, except earth, might become organs of sense, but, as they serve as indirect media, none of them would constitute a body capable of touch, i.e. the one sense which operates, not through an indirect medium, but by direct contact of the animal with the object. Nor can the animal body consist solely of earth, for touch is a sort of medium for all tangibles and the organ of touch is capable of receiving all tangibles, and not merely such as are qualities of earth. Hence with the tissues which consist of earth only, with bones, hair and the like, we have no sensation, and plants, which consist mainly of earth, have no sensation. Thus the organ of the one indispensable sense, touch, cannot consist exclusively either of earth or of any one of the other elements which serve as media for the telepathic senses [§ 1].

435 a 14. **πᾶν, ὥσπερ εἴρηται**, viz. 434 b 10 sqq., the proof extending to b 24. In 423 a 12—15 the proof is different, viz. that neither air nor water would constitute a solid body such as the animal requires. **πᾶν**, the whole body, and not any separate organ, as in the case of the higher senses. Only the surface of the body would come into contact with the external object, so that πᾶν practically means "at every point of the surface." From the remarks below a 24 about hair being insensible it follows that A. looked upon the hair as an excrescence and would restrict the surface of the body to flesh.

a 14. τὰ δὲ ἄλλα ἔξω γῆς, int. στοιχεῖα: αἰσθητήρια will then be predicate. A. should rather have said "air and water." See 425 a 3 τῶν δὲ ἁπλῶν ἐκ δύο τούτων αἰσθητήρια μόνον ἐστίν, ἐξ ἀέρος καὶ ὕδατος...τὸ δὲ πῦρ ἢ οὐθενὸς ἢ κοινὸν πάντων (since none of the sense-organs is independent of heat). From this interpretation of our passage Professor Beare dissents. He says (*Greek Theories*, p. 198, *n*. 1): "The obvious opposition here between τὰ ἄλλα and ἡ ἁφὴ below" (435 a 17) "makes it certain that by ἄλλα is meant not στοιχεῖα, but αἰσθητήρια." Accordingly he renders: "Now the other organs of sense might conceivably be formed without earth, since they all effect sensation by some medium or third thing, external to the body, through which each perceives its object." The hyperbaton in itself is no objection to the proposed construction, but the close proximity of τὰ ἄλλα to ἔξω γῆς would naturally suggest that earth is one of the class of things to which τὰ ἄλλα belong. The preposition properly means "outside of," "apart from," "except," and its force is strained if γίγνεσθαι ἔξω means "to be formed without including," i.e. to exclude from their composition, earth. Nor am I satisfied with the opposition which Prof. Beare discovers between τὰ ἄλλα αἰσθητήρια and ἡ ἁφή, for he has himself quite rightly pointed out (p. 245) that sometimes, e.g. 424 b 1 sqq., A. has used αἰσθητήρια in a narrower sense and treats the mediated organs of sight, hearing and smell as if they alone were called αἰσθητήρια.

a 15 πάντα δὲ τῷ δι' ἑτέρου...16 διὰ τῶν μεταξύ. See 424 b 24 sqq.

a 17. αὐτῶν, int. τῶν αἰσθητῶν, or more specifically τῶν ἁπτῶν. So 423 b 11, 424 b 28, 29, 426 b 16. **τοὔνομα.** The sense of touch, touching, derives its name from the contact which is its necessary condition, i.e. the contact between the external body and the surface of the animal body. Bodies can be in contact without any sensation resulting. See *note* on 434 b 12. Cf. 423 a 23—b 1 and 424 a 32—b 3, where plants are said to have no sense of touch, though not only in contact with but affected by, i.e. warmed or cooled by, contact with external objects. As just before A. has said or implied that ἁφή, the sense of touch, discerns by touching, i.e. being in direct contact, so immediately afterwards he reminds us that the other or telepathic senses also discern by contact, τῇ ἁφῇ, though by indirect contact.

a 18 καίτοι...19 ἑτέρου. Cf. 423 b 1 sqq., where it is shown that for touch the flesh is an inseparable medium, while the three higher senses perceive objects at a greater distance than tangibles: cf. 423 b 4—6. See 419 a 26—28, 434 b 29—435 a 2.

a 19. αὕτη δὲ δοκεῖ μόνη δι' αὑτῆς. Strictly construed, this would make flesh the organ of touch, whereas A. has declared it to be the medium and not the organ 423 b 22 sq. But δοκεῖ implies popular opinion, to which he does not necessarily commit himself, cf. 427 a 19 sq. If the interpretation of 426 b 15—17 which I have given is correct, A. in that passage, as also in 424 b 27—30, has, in spite of his dissent in II., c. 11, returned to the popular opinion and used it where his distinction is unimportant for the question under discussion. See *note* on 422 b 34, p. 405.

a 19. τῶν μὲν τοιούτων στοιχείων, the elements which serve for the construction of the sense-organs in the narrower sense of the word noted above on a 14, i.e. the organs of sight, hearing and smell, which might be formed of air, water and fire. Cf. Simpl. 327, 10 συμπεραίνεται οὖν, ὡς τῶν λεπτομερῶν στοιχείων κἂν τινα ᾖ αἰσθητήρια, ἀλλ' οὐκ ἂν γένοιτο τοιοῦτον αἰσθητήριον, οἷον τὸ τοῦ ὅλου ζῴου ἐστὶ σῶμα.

a 21. γήϊνον. Cf. a 25 *infra* γῆς ἐστίν. See also 410 a 30 sq. and 423 a 12—15, where it is assumed that the body cannot consist solely of earth. **πάντων...**

μεσότης. From 424 a 32—b 3 we learn that plants, although they are affected by tangibles, have no sense of touch, *αἴτιον γὰρ τὸ μὴ ἔχειν μεσότητα* (424 b 1), i.e. (*ib.* b 2) *τοιαύτην ἀρχὴν οἵαν τὰ εἴδη δέχεσθαι τῶν αἰσθητῶν*, words which clearly explain what is meant by *μεσότης*. A change (*κίνησις*) is necessary for perception, and a sensible which is equally warm or equally cold with the sense-organ will not produce a change of temperature (423 b 31—424 a 10).

a 22 οὐ μόνον ὅσαι...23 ἁπάντων. Not only the different qualities of earth, but the different qualities of body generally as such (423 b 27—29), are tangible.

a 24 τοῖς ὀστοῖς...25 γῆς ἐστίν. A body constituted of earth alone would be incapable of apprehending qualities which belong to the other elements but not to earth (cf. 410 a 30—b 2).

435 b. διὰ τοῦτο...ὅτι γῆς ἐστίν. If a single bodily part, consisting wholly or mainly of earth, is *ipso facto* incapable of sensation, much more will this be the case with plants, in the entire composition of which the element of earth preponderates. Cf. *note* on a 17 *supra*, *τοὔνομα*.

b 2. ἄλλην, int. *αἴσθησιν*. Cf. 435 a 12 sq., 415 a 3 sq.

b 2. τοῦτο δὲ τὸ αἰσθητήριον, i.e. *τὸ ἁπτικόν*. We note that the form of the inference implies that *ἁφή* is an *αἰσθητήριον* and thus the term *ἁφή* does not escape the ambiguity so notorious for *ὄψις*, *ἀκοή*, which we have also found in *ὄσφρησις* and *γεῦσις* 423 b 19, 422 a 32 sq. As we learn from 423 a 12—15 flesh and whatever is analogous to flesh, whether it is properly the organ or the medium of touch, must be a compound substance containing the other elements as well as earth. This sentence completes the proof of the proposition enunciated at the beginning of the chapter, 435 a 11, viz. "it is evident that the body of an animal cannot consist solely of a single element."

435 b 4—19. Touch is the only sense, the lack of which involves the destruction of the animal. Without touch a living thing would not be an animal, but a plant. Colours, sounds and smells in excess do not injure the animal, but destroy the corresponding sense-organ. Incidentally they may destroy animal life, if conjoined with a shock or blow or other fatal mischief operating by contact. So, too, poison operates fatally in so far as incidentally it affects touch [§ 2]. Tangibles in excess, however, are destructive to the whole animal, for the sense which they destroy is the one sense with which the animal cannot dispense [§ 3 to 435 b 19].

435 b 5 οὔτε γὰρ...6 μὴ ζῷον. From the parallel clause which follows (b 6 *οὔτε* ...7 *ταύτης*) we are justified in supplying *ὂν* with *μὴ ζῷον*. If anything which has life, *ζῶν τι*, *μετέχον τι ζωῆς*, is without the sense of touch, we do not call it an animal (*ζῷον*), but only a plant. The stress of predication in this and similar sentences is on the participial phrase *μὴ ζῷον* [int. *ὄν*]. The words literally mean "if it be not an animal [but only a plant] it cannot have this sense of touch." The implication is, as already stated, "a living thing cannot have the sense of touch without being *ipso facto* an animal, as distinct from a plant." This accords with a previous doctrine of the treatise (411 b 27—30, 413 a 22—b 4, 414 a 2 sq., a 32—b 1, b 3, b 6—14, 415 a 1—6). It is restated *infra* 435 b 16 sq.

b 6 οὔτε ζῷον ὂν...7 πλὴν ταύτης. The facts are given 413 b 4—7, 414 a 2—3, 415 a 4—6 *ἁφή...αἴσθησιν*.

b 9. ἀλλὰ μόνον τὰ αἰσθητήρια. See on 424 a 28—32, 426 a 30—b 2, b 7. Cf. 429 a 31—b 3.

b 10. κατὰ συμβεβηκός, nisi quid coniunctum est, quod simul in tactum agat (Trend.). **οἷον...11 πληγή.** Cf. 424 b 10—12. A. is thinking of the thunderbolt, Simpl. 328, 35—39. In commenting on 424 b 10—12 I omitted to cite the

[illegible] possibly accommodating [illegible] splitting of stones [illegible] such as thunder.

[illegible] the position which he reaches [illegible] and therefore incapable [illegible] arguing against the [illegible] the authors of that [illegible] sounds should fail to [illegible] not be affected [illegible]

[illegible] great and mischievous physical [illegible] thunderbolt [illegible] but to mere noise,

[illegible] moves [illegible] though he pre- [illegible]

[illegible] vapour.

[illegible] In any case, on [illegible] is compared with another [illegible]

b 10 [illegible] Like death from the effect of poison. [illegible] *qua* gustable, [illegible] taste, but, like every gustable, [illegible] 11, [illegible] sq., 434 b 18 sq., 21), and, if a [illegible] capable of reacting upon the flesh, the organ (or medium) of touch; [illegible] incidentally it kills.

b 19 [illegible] (cf. 424 a 28 [illegible]) with the parallel [illegible]

b 18 [illegible] the faculty residing in the sense-organ (cf. *infra* b 17 sq.), the relation between the two being that laid down 424 a 24 [illegible] 28. [illegible] With the infinitive supply the dative τῷ ζῴῳ. If we compare [illegible] this seems a more probable supplement than [illegible] Plants are ζῶντα, though not ζῷα. Cf. [illegible] The reference [illegible] is probably to the present chapter, [illegible]

b 19 [illegible] The neuter μόνον, τοῦτο would have been [illegible] preceding.

435 b 19–25. The other senses, as said above, are means not to being, but to well-being. Sight is necessary in order that the animal assumed to live in air or water may see. Taste is required because of the pleasurable and painful, in order that it may discriminate them in food and feel a desire [illegible] and regulate its movements accordingly. Hearing it possesses that something may be signified to it and a tongue that it may signify something [illegible] [illegible]

This summary should be compared with the fuller and more precise statement in *De Sensu* 1, 436 b 18 sqq., which differs from it in several important particulars. (1) In *De Sensu*, having previously, 436 b 12 sq., associated taste with touch as necessary to all animals (as indeed was done *De A.* 434 b 22), A. treats of sight, hearing and smell, but not taste, as functions of animals capable of locomotion. An animal capable of locomotion is *pro tanto* more perfect than one incapable: cf. Simpl. 329, 23 *ὡς δὲ πορευτικὸν τοῦ ζῴου ἁπλῶς [ὄντος] τελειότερον.* (2) These three senses in all animals which possess them subserve a double purpose: (*a*) they are necessary to existence, *σωτηρίας ἕνεκεν*, 436 b 20, (*b*) they promote well-being, *τοῦ εὖ ἕνεκα*, 437 a 1. (3) It is utility to animals endowed with intelligence that alone is there declared to be *τοῦ εὖ ἕνεκα*. (4) Superior utility is claimed for the sense of hearing, even above sight, but such utility belongs to it only incidentally, 437 a 11 *κατὰ συμβεβηκὸς δὲ πρὸς φρόνησιν ἡ ἀκοὴ πλεῖστον συμβάλλεται μέρος.* (5) The part played by the tongue as the organ of speech is not mentioned. There can be no doubt that this account in *De Sensu* must be taken as the authoritative statement, supplementing the condensed and hasty sketch before us in *De A.*

435 b 20. ὥσπερ εἴρηται, viz. 434 b 24. **οὐ τοῦ εἶναι ἕνεκα ἀλλὰ τοῦ εὖ.** For *εἶναι* in the sense of "exist" cf. 415 b 12 sq., 416 b 14, 16, 20, 434 b 7. Cf. 420 b 20, *note*. *Τὸ εὖ* is there opposed to what is necessary (*τὸ ἀναγκαῖον*). So here it is opposed to bare existence (*τὸ εἶναι*). As is stated 413 a 30 sq., b 7 sq., 415 a 1 sq., animal life needs nourishment for its support: to provide this nourishment touch, or its variety, taste (434 b 18—23), would suffice. What is said in 413 a 30 sq. *καὶ ζῇ διὰ τέλους ἕως ἂν δύνηται λαμβάνειν τροφήν* (cf. 434 a 22—26) is as true of the lowest forms of animals as it is of plants. All that goes beyond this indispensable minimum A. here puts down to the account of well-being (*τὸ εὖ*) or a higher life (*τὸ εὖ ζῆν*) to which the telepathic senses are the necessary means and adjuncts; from the humble beginnings said (*De Sensu* 1, 436 b 20) to be *σωτηρίας ἕνεκεν* to the lofty achievements incidentally realised in animals endowed with intelligence, and particularly in man (*De Sensu* 1, 437 a 2—15).

b 21. ἐν ἀέρι καὶ ὕδατι, int. *ἐστίν*: the two elements "in" which *ὡς ἐν τόπῳ* animals live, 423 a 29—b 1. Animals are roughly divided into terrestrial and aquatic. Cf. *Meteor.* IV. 4, 382 a 6 *καὶ ἐν γῇ καὶ ἐν ὕδατι ζῷα μόνον ἐστίν, ἐν ἀέρι δὲ καὶ πυρὶ οὐκ ἔστιν, ὅτι τῶν σωμάτων ὕλη ταῦτα.* Land-animals are surrounded by or immersed in air, *τὸ περιέχον*: *Phys.* IV. 4, 211 a 24 *λεγόμεν εἶναι ὡς ἐν τόπῳ ἐν τῷ οὐρανῷ, διότι ἐν τῷ ἀέρι, οὗτος δ' ἐν τῷ οὐρανῷ, καὶ ἐν τῷ ἀέρι δὲ οὐκ ἐν παντί, ἀλλὰ διὰ τὸ ἔσχατον αὐτοῦ καὶ περιέχον ἐν τῷ ἀέρι φαμὲν εἶναι.*

b 22. ὅπως ὁρᾷ. Cf. *Metaph.* 1050 a 9 *τέλος δ' ἡ ἐνέργεια, καὶ τούτου χάριν ἡ δύναμις λαμβάνεται. οὐ γὰρ ἵνα ὄψιν ἔχωσιν ὁρῶσι τὰ ζῷα, ἀλλ' ὅπως ὁρῶσιν ὄψιν ἔχουσιν.* Cf. *De Sensu* 1, 437 a 5 *διαφορὰς μὲν γὰρ πολλὰς καὶ παντοδαπὰς ἡ τῆς ὄψεως ἀγγέλλει δύναμις διὰ τὸ πάντα τὰ σώματα μετέχειν χρώματος, ὥστε καὶ τὰ κοινὰ διὰ ταύτης αἰσθάνεσθαι μάλιστα*, *Metaph.* 980 a 21—27. **ὅλως δ' ἐπεὶ ἐν διαφανεῖ**, int. *ἐστί*. Transparency is an attribute both of air and water 418 b 6.

b 22 γεῦσιν δὲ...23 ἐπιθυμῇ. This was explained 414 b 11—14, which serves to qualify and interpret 414 b 3—9. Cf. also *De Sensu* 1, 436 b 15—18 *ἡ δὲ γεῦσις διὰ τὴν τροφήν* [int. *ἀκολουθεῖ πᾶσιν ἐξ ἀνάγκης*]. *τὸ γὰρ ἡδὺ διακρίνει καὶ τὸ λυπηρὸν αὐτῇ περὶ τὴν τροφήν, ὥστε τὸ μὲν φεύγειν τὸ δὲ διώκειν.*

b 24. καὶ κινῆται. Possibly *κατὰ τόπον* should be supplied. Cf. 434 b 16 *ἁπτόμενον δέ, εἰ μὴ ἕξει αἴσθησιν, οὐ δυνήσεται τὰ μὲν φεύγειν τὰ δὲ λαβεῖν*, and *De Sensu* l.c. 436 b 16—18, cited in last *note*. But the part played by taste as

an incentive to seek food is small in comparison with that played by smell. Further, it would generally involve the mechanism of φαντασία, upon which A. here does not enter. As noticed above in the passage of *De Sensu*, A. associates taste with touch, as necessary to existence and therefore found in all animals, rather than with the higher senses τοῦ εὖ ἕνεκα. Simplicius (329, 24 sq.) naturally enquires why taste (γεῦσις) is now reckoned among the higher senses when we were previously told that, as a variety of touch, ἁφή τις, it was absolutely necessary for existence. He can only surmise that taste is a higher sense as contributing to the prolonged existence of the animal; 329, 26 διότι πρὸς τὸ διαμένειν μᾶλλον...καὶ πρὸς τὸ ἐπὶ πλέον εἶναι, ἀλλ' οὐ πρὸς τὸ εἶναι ἁπλῶς συντελεῖ.

b 24. ὅπως σημαίνηταί τι αὐτῷ. This reading agrees with Themistius and the old Latin translation. Torstrik has the merit of expelling the absurd σημαίνῃ τι αὐτῷ and of introducing the passive and αὐτῷ. If he is right in rejecting the last clause of the treatise, he is also right in not inserting τι. **γλῶτταν δέ.** Trend. cites *De Resp.* 4, 476 a 17 τῷ αὐτῷ ὀργάνῳ χρῆται πρὸς ἄμφω ταῦτα ἡ φύσις, καθάπερ ἐνίοις τῇ γλώττῃ πρός τε τοὺς χυμοὺς καὶ πρὸς τὴν ἑρμηνείαν. Linguae inter sensus mentionem mireris. Sed ab auditu vel invita offerebatur. Neque a consilio aliena. Nam etiam linguae sermone, si vitam, detractis ornamentis, ad necessitatis angustias redigere velis, vitae conservatio carere potest. This is a lame apology, for A. has been dealing with animals in general and not with man in particular. And, if we grant to M. Rodier that the use which has just been assigned to hearing only belongs to it *per accidens*, this is hardly a sufficient reason for introducing as a pendent an adventitious use of the organ of a different sense which has already been dealt with. However, Themistius must have found the remark in its present context and, though it might seem more appropriate to *De Part. An.*, it is fully endorsed by the teleological passage 420 b 16—20. Plato also opposes the reception of food, implying the necessary use of the tongue, to the utterance of speech which is the employment of that organ τοῦ εὖ ἕνεκα, *Tim.* 75 E: "For all that enters in to give sustenance to the body is of necessity; but the stream of speech which flows out and ministers to understanding is of all streams the most noble and excellent" (Archer-Hind's translation).

Here the teleological study breaks off. A. does not go on to consider the part taken by φαντασία or λογισμὸς in those animals which possess these powers, although some such discussion might have been expected from the words of 414 b 33 διὰ τίνα δ' αἰτίαν τῷ ἐφεξῆς οὕτως ἔχουσι σκεπτέον: cf. 415 a 10 οἷς δ' ἐκείνων ἕκαστον, οὐ πᾶσι λογισμός.

APPENDIX.

The age and authority of Theophrastus entitle him to a respectful hearing when he comments upon the teaching of his master. I accordingly follow Trendelenburg in citing the more important of the few fragments of his, taken from the treatises Περὶ φυσικῶν and Περὶ κινήσεως, which relate to the subject of intellect. Themistius at the end of his own commentary on III., c. 5 adduces Theophrastus as the earliest and most important witness. Apparently he quotes two separate passages *verbatim* and gives one other short sentence and the condensed outline of passages which he does not quote. Priscianus Lydus furnishes a much larger number of excerpts, mostly short scraps. When we compare the manner in which citations common to the two are presented in Themistius and in Priscian, we find a great diversity of arrangement. If the order of the sentences in Themistius is consecutive, that in Priscian certainly is not. Either the one or the other rearranged his author to suit his particular purpose, and the more probable view is that Priscian did so. Theophrastus may have repeated the phrase *οὐχ οὕτω ληπτέον* once, as a comparison of Prisc. 25, 28, attested by Them. 107, 34, with Prisc. 26, 2 sq. certainly suggests. But when Priscian uses the phrase a third time (30, 29), it is probable that this is not a fresh citation in a different connexion, but that Priscian is reverting to a passage formerly cited. Cf. 30, 29 *διό φησιν, οὐχ οὕτω ληπτέον, ἀλλ' ὡς ἐλέχθη πρότερον ἐν οἷς ἠξίου κατὰ ἀναλογίαν κτέ.* with 26, 2 sqq. cited below. Cf. also the similar repetitions of *τί τὸ πάθος ἢ ποία μεταβολή* 28, 15 from 27, 10, of *ὑπὸ τίνος οὖν ἡ γένεσις, εἴτε ἕξεως καὶ δυνάμεως εἴτε οὐσίας* 31, 24 sq. from 31, 11 sq., of *πῶς ἑκάτερα* 33, 17 from 32, 31, of *οἰκείως ληπτέον* 35, 23 sq. from 34, 30 sq., and the like. In some cases, as in excerpts 2, 3, 7, 8, it is not easy to determine whether Priscian is citing Theophrastus or Aristotle directly, for he is not always exact in his citations. See, e.g., Prisc. 36, 9—13, where he professes to give the substance of Aristotle, though Bywater can find no nearer parallel than *De A.* 430 a 10, 430 a 3. The version is repeated 36, 25. Cf. also Prisc.

[illegible]

φύσιν μηδὲν ὢν ἅπαντα δὲ δυνατός. οὐχ οὕτω δὲ ληπτέον οὐδὲ πάντα νοῦν, ἀλλὰ δεῖ διελεῖν. ποῖος οὖν καὶ τίς ἡ διαίρεσις; ἡ μὲν γὰρ ὕλη οὐ τόδε τι, ὁ δὲ νοῦς εἰ μὴ οὕτω, τί ἂν ἕτερον; κατὰ ἀναλογίαν οὖν καὶ τὸ δυνάμει ληπτέον ἐπὶ τοῦ ψυχικοῦ νοῦ· ὡς γὰρ πρὸς τὸν ἐνεργείᾳ νοῦν.

Them. 107, 31—34, Them. 107, 34 sq. (=Prisc. 25, 28 sq.), Them. 107, 35, Them. 108, 1—6 (=Prisc. 27, 8—14), Them. 108, 6 sq. (=Prisc. 26, 1 sq.), Prisc. 26, 2—6.

7. *συμπεριλαμβάνον* codd. Them., correxit Brandis ‖ 11. *ὑπὸ σωματὸς* Them. ‖ 15. virgulam post *μή* Heinze, post *νοεῖν* transposui.

Cf. Them. 107, 30 *ἄμεινον δὲ καὶ τὰ Θεοφράστου παραθέσθαι περί τε τοῦ δυνάμει νοῦ καὶ τοῦ ἐνεργείᾳ. περὶ μὲν οὖν τοῦ δυνάμει τάδε φησίν· ὁ* **δὲ νοῦς πῶς**...(108, 7) **ἅπαντα δὲ δυνατός.** *καὶ τὰ ἐφεξῆς μακρὸν ἂν εἴη παρατίθεσθαι καίτοι μὴ μακρῶς εἰρημένα, ἀλλὰ λίαν συντόμως τε καὶ βραχέως τῇ γε λέξει· τοῖς γὰρ πράγμασι μεστά ἐστι πολλῶν μὲν ἀποριῶν, πολλῶν δὲ ἐπιστάσεων, πολλῶν δὲ λύσεων. ἔστι δὲ ἐν τῷ πέμπτῳ τῶν Φυσικῶν, δευτέρῳ δὲ τῶν Περὶ ψυχῆς, ἐξ ὧν ἁπάντων δῆλόν ἐστιν, ὅτι καὶ περὶ τοῦ δυνάμει νοῦ σχεδὸν τὰ αὐτὰ διαποροῦσιν, εἴτε ἔξωθέν ἐστιν εἴτε συμφυής, καὶ διορίζειν πειρῶνται, πῶς μὲν ἔξωθεν πῶς δὲ συμφυής.* (Frag. LIII b W, p. 226—227, 9.)

2. *ὁ νοῦς ἐστὶ τὰ νοητά.* Prisc. 28, 3.

Prisc. 28, 1 *διὸ μία ἡ ἀμφοῖν, τοῦ τε νοῦ περὶ τὰ νοητὰ καὶ τῶν νοητῶν εἰς τὸν νοῦν ἡ ἐνέργεια. καθὸ οὐ διέσπασται ἀλλ'* **ὁ νοῦς...τὰ νοητά.** Cf. *De A.* 429 b 30.

3. *τῇ οὐσίᾳ ἐστὶν ἐνέργεια.* Prisc. 28, 12.

Prisc. 28, 11 sq. *καὶ γὰρ* **τῇ...ἐνέργεια** *δευτέρως καὶ ὁ δυνάμει νοῦς.* Cf. *De A.* 430 a 18.

4. *εἰ γὰρ ὅλως ἀπαθής, οὐδὲν νοήσει...ἀπαθὴς γὰρ ὁ νοῦς, εἰ μὴ ἄρα ἄλλως παθητικός...οὐχ ὡς τὸ κινητικόν, ἀτελὴς γὰρ ἡ κίνησις, ἀλλ' ὡς ἐνέργεια. ταῦτα δὲ διαφέρει. χρῆσθαι δὲ ἀναγκαῖον ἐνίοτε τοῖς αὐτοῖς ὀνόμασιν.*

Prisc. 28, 16 sq., 20 sq. (=Them. 108, 15 sq.), Prisc. 28, 21—23.

Cf. Prisc. 28, 16 **εἰ γὰρ...ἀπαθής,** *φησίν,* **οὐδὲν νοήσει,** *τὴν ἀπὸ τῶν νοητῶν τελείωσιν πάθος καλῶν, ἐπεὶ πάντῃ καθαρεύειν τὸν νοῦν ἀνάγκη. ἐπεὶ δὲ καὶ ἀπὸ τῶν νοητῶν κατ' οἰκείαν τελειοῦται ἐνέργειαν, διὰ τοῦτο κοινότερον ἀλλ' οὐ κυρίως ἂν τοῦ πάθους ἐκείνου ἀκούοιμεν·* **ἀπαθὴς γὰρ ὁ νοῦς,** *φησὶν ὁ Θεόφραστος,* **εἰ μὴ ἄρα... ὀνόμασιν:** Them. 108, 14 *λέγουσι δὲ καὶ αὐτὸν ἀπαθῆ καὶ χωριστόν, ὥσπερ τὸν ποιητικὸν καὶ τὸν ἐνεργείᾳ·* **ἀπαθὴς γάρ,** *φησίν, ὁ* **νοῦς...παθητικός,** *καὶ ὅτι τὸ παθητικὸν ἐπ' αὐτοῦ οὐχ ὡς τὸ κινητὸν ληπτέον (ἀτελὴς γὰρ ἡ κίνησις), ἀλλ' ὡς ἐνέργειαν.*

5. *καὶ πῶς νοητὸν ὑπὸ νοητοῦ πάσχει;...καὶ πῶς αὐτὸς ἑαυτὸν τελειοῖ;...καὶ διὰ τί οὐκ ἀεί;*

Prisc. 28, 29, 31; 29, 1.

Priscian. 28, 29 (post lacunam) **καὶ πῶς...πάσχει;** ἐπειδὴ ὡς νοητὸν δεύτερον, τουτέστιν ὡς ἐνεργητικὸν καὶ ὡς ἄρχον καὶ αὐτενεργήτως ὁριζόμενον ὑπὸ τοῦ κρείττονος. **καὶ πῶς...τέλειοι;** διότι, ὡς εἴρηται, καὶ τὰ ἀπὸ τοῦ κρείττονος αὐτενεργήτως δέχεται. **καὶ...ἀεί;** ἢ ὁ μὲν νοῦς ἀεὶ ἐνεργεῖ, ἡ δὲ ψυχὴ οὐκ ἀεὶ χρῆται καὶ παρόντι τῷ νῷ ἐν τῇ πρὸς τὰ σώματα στροφῇ. ἐοίκασι δὲ οἱ ἄνδρες οὗτοι, καὶ ὁ Ἀριστοτέλης καὶ ὁ Θεόφραστος, ὅπερ καὶ ἤδη ἔφαμεν, νοῦν ἐνίοτε καὶ πᾶσαν τὴν λογικὴν προσαγορεύειν ζωήν, ὅπου γε καὶ μέχρι φαντασίας τὸ τοῦ νοῦ διατείνουσιν ὄνομα.

6. ἐπεὶ τὸ ὑφ' ἑτέρου κινοῦντος τὴν ἐνέργειαν εἶναι τοῦ νοῦ καὶ ἄλλως ἄτοπον, καὶ πρότερόν τι ποιεῖν ἐστὶν ἕτερον τοῦ νοῦ, καὶ οὐκ ἐφ' ἑαυτῷ τὸ νοεῖν, εἰ μή τις ἄλλος ὁ κινῶν νοῦς.

Prisc. 29, 12—15.

Prisc. 29, 11 τελεοῦται δὲ καὶ ἡ ψυχὴ ἀφ' ἑαυτῆς τε ἀρχομένη καὶ ἑαυτὴν προσάγουσα τῷ νῷ, καὶ αὐτενεργήτως καὶ τὴν ἀπ' ἐκείνου δεχομένη τελείωσιν· **ἐπεί,** φησί, **τὸ ὑφ' ἑτέρου...ὁ κινῶν νοῦς.** καὶ ταῦτα ἀληθῆ εἴτε τὴν μετεχομένην ὑπὸ ψυχῆς ἀμέριστον οὐσίαν καλοίη νοῦν, εἴτε αὐτὴν τὴν λογικὴν ψυχήν.

7. εἰ γὰρ ἐνεργῶν γίνεται τὰ πράγματα, τότε δὲ μάλιστα ἑκάτερόν ἐστι, τὰ πράγματα ἂν εἴη ὁ νοῦς...ἆρα οὖν, ὅταν μὴ νοῇ, μὴ ὢν τὰ πράγματα οὐδὲ νοῦς ἐστίν;...ἆρα οὖν οὐδέν ἐστι πρὶν νοεῖν;...καὶ γὰρ ἄτοπον εἰ δυνάμει μὲν ὢν μηδέν ἐστιν, ἐνεργείᾳ δὲ ἕτερος ὅταν μὴ ἑαυτὸν νοῇ, τῷ δὲ ἄλλο καὶ ἄλλο νοεῖν οὐδέποτε ὁ αὐτός. ἄκριτος γάρ τις αὕτη γε καὶ ἄτακτος ἡ φύσις...οὐχ οὕτω ληπτέον...αὕτη μὲν γὰρ [int. ἡ αἴσθησις] οὐκ ἄνευ σώματος, ὁ δὲ χωριστός.

Prisc. 29, 18—20, 22 sq., 26; 30, 22—25, 29; 31, 1 sq.

Cf. Prisc. 30, 19 κἂν οὖν μὴ πάντα ἅμα, ἄλλοτε δὲ ἄλλα γινώσκῃ, οὐ διὰ τοῦτο καὶ ἔστιν ἄλλοτε ἄλλα καὶ οὐδέποτε τὰ αὐτά, διότι οὐ πάντῃ μεταβάλλεται, ἀλλ' ἔστι τι καὶ τὸ μένον ἐπὶ τῆς ψυχῆς, καθὰ ἀεὶ ἕστηκεν ἐν αὐτῇ τὰ πράγματα. **καὶ γὰρ ἄτοπον,** φησίν, **εἰ...ἡ φύσις**—ἄριστα ἐλέγχων τοὺς δυνάμει πάντα καὶ μηδὲν εἶναι καθ' αὑτὸν <τὸν> νοῦν ὑποτιθεμένους. πρῶτον μὲν γὰρ ὅταν μὴ νοῇ οὐδὲν ἔσται· ἔπειτα δὲ καὶ νοῶν, ὅταν ἄλλα καὶ μὴ ἑαυτὸν νοῇ, ἕτερόν τι ἔσται καὶ οὐκ αὐτός, καὶ ἄλλοτε ἄλλος καὶ ἀεὶ μεταβαλλόμενος. διό φησιν, **οὐχ οὕτω ληπτέον,** ἀλλ' ὡς ἐλέχθη πρότερον ἐν οἷς ἠξίου κατὰ ἀναλογίαν ἀκούειν τὸ δυνάμει καὶ ἐνεργείᾳ, καὶ μὴ ὡς ἐπὶ τῆς ὕλης οὕτω καὶ ἐπὶ τοῦ νοῦ· τόδε γάρ τι εἶναι τὸν νοῦν· μηδὲ μὴν ὡς ἐπὶ τῆς αἰσθήσεως· **αὕτη μὲν γάρ,** ὡς καὶ νῦν ἐπάγει, **οὐκ ἄνευ...χωριστός:** Them. 108, 17 καὶ προϊὼν φησι τὰς μὲν αἰσθήσεις οὐκ ἄνευ σώματος, τὸν δὲ νοῦν χωριστόν. Cf. *De A.* 429 b 4 sq.

8. ὅταν γὰρ οὕτως ἕκαστα γένηται ὡς ἐπιστήμων κατ' ἐνέργειαν λέγεται, τοῦτο δὲ συμβαίνειν φαμὲν ὅταν δύνηται δι' ἑαυτοῦ ἐνεργεῖν, ἔστι μὲν οὖν καὶ τότε δυνάμει πως, οὐ μὴν ὁμοίως καὶ πρὶν μαθεῖν καὶ εὑρεῖν. ὑπὸ τίνος οὖν ἡ γένεσις καὶ πῶς, εἴτ' οὖν ἕξεως καὶ δυνάμεως εἴτε οὐσίας; ἔοικε δὲ μᾶλλον ἕξεως, αὕτη δὲ οἷον τελεοῦν τὴν φύσιν.

Prisc. 31, 8—13.

Prisc. 31, 5 *καὶ ἐπειδὴ συμφυὴς ἐστι τοῖς ἐπιστητοῖς, ὅταν ὁτιοῦν ἐπίσταται, ἐνεργείᾳ οὖσα ὅπερ τὸ ἐπιστητὸν οὐχ ἑτέρα ἐστὶν ἑαυτῆς, διότι αὕτη κατὰ τὰ ἐπιστητὰ πάντα οὐσίωται· ἀλλὰ δὴ φαίνεται καὶ γινομένη πως.* **ὅταν γὰρ...τὴν φύσιν.** Cf. *De A.* 429 b 5—9.

9. *πῶς ἑκάτερα* [int. *θεωρεῖ ὁ δυνάμει νοῦς*]*;...πῶς τὰ ἐν ὕλῃ καὶ ἀφαιρέσει...ἆρα οὖν ἑτέρῳ ἢ ἑτέρως ἔχοντι κρίνει...ἢ τῷ αὐτῷ καὶ ὡσαύτως ἔχοντι;...ὅλως δὲ ὡς χωριστὰ τὰ πράγματα τῆς ὕλης, οὕτω καὶ τὰ περὶ τὸν νοῦν.*

Prisc. 32, 31 sq.; 33, 25, 26 sq., 32 sq.

Prisc. 32, 30 *ἐπειδὴ ἀμφοτέρων* [int. *τῶν ἀΰλων εἰδῶν καὶ τῶν ἐνύλων εἰδῶν*] *θεωρητικὸς ὁ δυνάμει νοῦς, ζητεῖ,* **πῶς ἑκάτερα,** *καὶ* **πῶς τὰ...ἀφαιρέσει·** *καὶ γὰρ αὐτὰ τὰ ἔνυλα ἢ κατὰ τὸ συναμφότερον ἢ κατὰ μόνον θεωρεῖ τὸ εἶδος,* 33, 25 **ἆρα οὖν...κρίνει** *τά τε ἄυλα καὶ τὰ ἔνυλα, καὶ τὰ ἐν ὕλῃ αὖ καὶ τὰ ἐξ ἀφαιρέσεως,* **ἢ τῷ αὐτῷ...ἔχοντι,** 33, 32 **ὅλως δὲ...τὸν νοῦν** *ἀμφότεροι ἀποφαίνονται ὅ τε Ἀριστοτέλης καὶ Θεόφραστος.* Cf. *De A.* 429 b 18—22.

10. *αὐτὸ τὸ εἶναι τὰ πράγματα τὸν νοῦν καὶ δυνάμει καὶ ἐνεργείᾳ ληπτέον οἰκείως...δυνάμει μὲν τὰ νοητὰ ὁ δυνάμει νοῦς...ἐντελεχείᾳ δὲ οὐδὲν πρὶν νοεῖν.*

Prisc. 34, 29—31; 35, 29 sq., 32 sq.

Prisc. 34, 29 *πάλιν δὲ ὑπομιμνήσκει φιλοσοφώτατα ὁ Θεόφραστος ὡς καὶ* **αὐτὸ τὸ εἶναι...οἰκείως,** *ἵνα μὴ ὡς ἐπὶ ὕλης κατὰ στέρησιν* **τὸ δυνάμει,** *ἢ κατὰ τὴν ἔξωθεν καὶ παθητικὴν τελείωσιν* **τὸ ἐνεργείᾳ** *ὑπονοήσωμεν, ἀλλὰ μηδὲ ὡς ἐπὶ αἰσθήσεως, ἔνθα διὰ τῆς τῶν αἰσθητηρίων κινήσεως ἡ τῶν λόγων γίνεται προβολή, καὶ αὕτη τῶν ἔξω κειμένων οὖσα θεωρητική· ἀλλὰ νοερῶς ἐπὶ νοῦ καὶ* **τὸ δυνάμει καὶ τὸ ἐνεργείᾳ εἶναι τὰ πράγματα ληπτέον,** 35, 24 *καί μοι δοκεῖ ἐπισημήνασθαι κἀνταῦθα τὸ* **δεῖν οἰκείως λαμβάνειν** *ὑπιδόμενος τὸ ἄγραφον γραμματεῖον, ἐνταῦθά που ὑπὸ τοῦ Ἀριστοτέλους ὡς παράδειγμα τοῦ δυνάμει νοῦ προφερόμενον, ἵνα καὶ τὸ ἄγραφον ὡς ἐν νῷ θεωρῶμεν, ἔχοντι μὲν κατ' οὐσίαν τὰ εἴδη καὶ τέλεια ἔχοντι, ὑπὸ δὲ τοῦ πρώτου νοῦ τελειουμένῳ καὶ ἐντελεχείᾳ γραφομένῳ. τὸ γὰρ ἀμέριστον καὶ ἡνωμένον τῆς τελειότητος ἐκεῖθεν.* **δυνάμει μὲν...νοῦς,** *ὡς καθ' ὑπόβασιν μὲν καὶ μετά τινος ἑτερότητος, ἀλλ' ἐγειρόμενος ἀφ' ἑαυτοῦ εἰς τὴν ἀπὸ τοῦ πρώτου νοῦ ἀμέριστον τελειότητα· τοιοῦτον γὰρ τὸ νοερὸν δυνάμει·* **ἐντελεχείᾳ...νοεῖν,** *τουτέστιν οὐκ ἀμερίστως οὐδὲ ἡνωμένως, πρὶν ὑπὸ τοῦ πρώτου τελειωθῆναι.* Cf. *De A.* 429 b 29—31.

11. *ἀλλ' ὅταν γένηται καὶ νοηθῇ δηλονότι ταῦτα* [int. *τὰ ἔνυλα*] *ἕξει* [int. *ὁ νοῦς*], *τὰ δὲ νοητὰ ἀεί, εἴπερ ἡ ἐπιστήμη ἡ θεωρητικὴ ταὐτὸ τοῖς πράγμασιν, αὕτη δὲ ἡ κατ' ἐνέργειαν δηλονότι· κυριωτάτη γάρ. τῷ νῷ τὰ μὲν νοητὰ ἀεὶ ὑπάρχει... τὰ δὲ ἔνυλα, ὅταν νοηθῇ, καὶ αὐτὰ τῷ νῷ ὑπάρξει.*

Prisc. 37, 24—30.

Prisc. 37, 24 *τοῦτο δὲ* (*De A.* 430 a 7—9) *διαρθρῶν ὁ Θεόφραστος ἐπάγει·* **ἀλλ' ὅταν...τῷ νῷ,** *φησί,* **τὰ μὲν νοητά,** *τουτέστι τὰ ἄυλα,* **ἀεὶ ὑπάρχει,** *ἐπειδὴ κατ' οὐσίαν αὐτοῖς σύνεστι καὶ ἔστιν ὅπερ τὰ νοητά·* **τὰ δὲ ἔνυλα...ὑπάρξει,** *οὐχ ὡς συστοίχως*

αὐτῷ νοηθησόμενα· οὐδέποτε γὰρ τὰ ἔνυλα τῷ νῷ ἀύλῳ ὄντι· ἀλλ' ὅταν ὁ νοῦς τὰ ἐν αὐτῷ μὴ ὡς αὐτὰ μόνον ἀλλὰ καὶ ὡς αἴτια τῶν ἐνύλων γινώσκῃ, τότε καὶ τῷ νῷ ὑπάρξει τὰ ἔνυλα κατὰ τὴν αἰτίαν. Cf. *De A.* 430 a 3—9.

12. ἐκεῖνο ἐπισκεπτέον, ὃ δή φαμεν ἐν πάσῃ φύσει τὸ μὲν ὡς ὕλην καὶ δυνάμει, τὸ δὲ αἴτιον καὶ ποιητικόν...τίνε οὖν αὗται αἱ δύο φύσεις; καὶ τί πάλιν τὸ ὑποκείμενον ἢ συνηρτημένον τῷ ποιητικῷ; μεικτὸν γάρ πως ὁ νοῦς ἔκ τε τοῦ ποιητικοῦ καὶ τοῦ δυνάμει. εἰ μὲν οὖν σύμφυτος ὁ κινῶν, καὶ εὐθὺς ἐχρῆν καὶ ἀεί· εἰ δὲ ὕστερον, μετὰ τίνος καὶ πῶς ἡ γένεσις; ἔοικε δ' οὖν ὡς ἀγένητος, εἴπερ καὶ ἄφθαρτος. ἐνυπάρχων δ' οὖν διὰ τί οὐκ ἀεί; ἢ διὰ τί λήθη καὶ ἀπάτη καὶ ψεῦδος; ἢ διὰ τὴν μεῖξιν.

Them. 108, 19—21, 22—28.

Them. 108, 18 ἁψάμενος δὲ καὶ τῶν περὶ τοῦ ποιητικοῦ νοῦ διωρισμένων Ἀριστοτέλει **ἐκεῖνό** φησιν **ἐπισκεπτέον...ποιητικόν**, καὶ ὅτι ἀεὶ τιμιώτερον τὸ ποιοῦν τοῦ πάσχοντος, καὶ ἡ ἀρχὴ τῆς ὕλης. ταῦτα μὲν ἀποδέχεται, διαπορεῖ δέ· **τίνε οὖν... διὰ τὴν μεῖξιν**. (Frag. LIII. b W, p. 227, 14—228, 4.)

13. αἱ μὲν ὀρέξεις καὶ ἐπιθυμίαι καὶ ὀργαὶ σωματικαὶ κινήσεις εἰσὶ καὶ ἀπὸ τούτου τὴν ἀρχὴν ἔχουσιν, ὅσαι δὲ κρίσεις καὶ θεωρίαι, ταύτας οὐκ ἔστιν εἰς ἕτερον ἀναγαγεῖν, ἀλλ' ἐν αὐτῇ τῇ ψυχῇ καὶ ἡ ἀρχὴ καὶ ἡ ἐνέργεια καὶ τὸ τέλος, εἴ γε δὴ καὶ ὁ νοῦς κρεῖττόν τι καὶ θειότερον, ἅτε δὴ ἔξωθεν ἐπεισιὼν καὶ παντέλειος...ὑπὲρ μὲν οὖν τούτων σκεπτέον, εἴ τινα χωρισμὸν ἔχει πρὸς τὸν ὅρον, ἐπεὶ τό γε κινήσεις εἶναι καὶ ταύτας ὁμολογούμενον.

Simpl. *in Phys.* 964, 31—965, 4; 965, 5 sq., Fr. LIII. W.

Simpl. *in Phys.* 964, 29 ταῦτα δὲ καὶ τὸν κορυφαῖον ἀρέσκει τῶν Ἀριστοτέλους ἑταίρων τὸν Θεόφραστον ἐν τῷ πρώτῳ τῶν Περὶ κινήσεως αὐτοῦ λέγοντα, ὅτι **αἱ μὲν ὀρέξεις...καὶ παντέλειος**. καὶ τούτοις ἐπάγει **ὑπὲρ μὲν οὖν...ὁμολογούμενον**.

In these excerpts I see nothing to justify the supposition that Theophrastus modified the conclusions of our treatise. The last, no. 13, tallies exactly with the position provisionally assumed in *De A.* I., c. 4: whereas Theophrastus speaks of κρίσεις and θεωρίαι as admittedly κινήσεις, A. himself not only says 408 b 3 sq. that, amongst other mental acts and conditions, διανοεῖσθαι is thought to be κίνησις, but also approves of saying that the man thinks with his soul, 408 b 14 sq. Again, the last words of no. 4 are obviously inspired by 418 a 2 sq. χρῆσθαι ἀναγκαῖον...ὡς κυρίοις ὀνόμασιν. I take it, then, that the object of Theophrastus is to confirm the

conclusions of our treatise and that his method, which Themistius found so perplexing, is to do this indirectly by thinking out the only possible alternatives, which A. sometimes left unexpressed, and showing exactly what difficulties beset our path if we take the one or the other of two conflicting views. The conclusion enunciated in no. 2, if we may trust its setting by Priscian, would seem to be that to which the cogent reasoning of no. 7 must lead. In no. 6 he seems to be arguing that the doctrine of intellect as capacity or potentiality is incomplete unless we assume that *τὸ κινοῦν* is *ἄλλος νοῦς*. Both here and in no. 7 he may have in view and be leading up to the position that intellect thinks itself (cf. 430 a 2 *καὶ αὐτὸς δὲ νοητός ἐστιν ὥσπερ τὰ νοητά*): or he may be preparing the way for the twofold nature of intellect with which no. 12 deals. On this last important problem he gives no uncertain sound. Intellect, presumably the human intellect, is in a manner composite, *μεικτόν πως*: cf. the last words *διὰ τὴν μεῖξιν*. One of the two elements, viz. that which serves as substratum or correlate to the other, the active element, he identifies with the capacity or potentiality of thinking, *ὁ δυνάμει νοῦς*. As to that which is the agent, *ὁ κινῶν*, it must be both *ἀγένητος* and *ἄφθαρτος*. But we have our choice of alternatives: either we may assume it to be connatural with the man, *σύμφυτος*, in which case it must have been active from the moment of birth and unintermittently; or we may suppose it to be a later growth, and then we must perforce explain how it springs up in him and what brings it there. (This dilemma recalls *Anal. Post.* II. 19, 99 b 25 *καὶ πότερον οὐκ ἐνοῦσαι αἱ ἕξεις ἐγγίνονται ἢ ἐνοῦσαι λελήθασιν κτέ.*) Why, then, do we not always think, and whence come forgetfulness, mistake and falsehood in our thought? Theophrastus answers, because the two elements are in the human mind intermingled: and just at this interesting point the citation breaks off, leaving the impression that Theophrastus had no more to say on 430 a 23—25. But from the first excerpt it is clear that on the origin of intellect as a whole he accepted the conclusions of *De Gen. An.* II., c. 3.

There is one other matter of minor importance, which relates to the setting provided by Priscian for excerpt no. 10. I should infer from the expression (35, 24) *καί μοι δοκεῖ ἐπισημήνασθαι κἀνταῦθα τὸ δεῖν οἰκείως λαμβάνειν ὑπιδόμενος τὸ ἄγραφον γραμματεῖον* that Theophrastus had not himself, or at any rate in that context, mentioned the simile of the unwritten tablet at all. It is Priscian who puts this gloss upon the scrap which he here cites as *δεῖν οἰκείως λαμβάνειν*, but 34, 30 sq. as *ληπτέον οἰκείως*. It would seem incon-

ceivable that Theophrastus should here be citing *De A.* 429 b 31, where our MSS. have δεῖ δ' οὕτως. The likeness to 26, 2 οὐχ οὕτω δὲ ληπτέον and 26, 5 κατὰ ἀναλογίαν οὖν...ληπτέον is too strong to permit us to consider the one a comment upon Aristotle and the other a citation from him. Priscian in his own interpretation of the simile follows the path of Neo-Platonic orthodoxy. Whereas Alexander had brought the tablet into connexion with 429 a 27 sq., "the place of forms," the Neo-Platonists preferred to interpret it by 430 a 15 sqq., making the unwritten tablet answer to the colours, which need the sunlight to bring them into actuality. See Prisc. Lyd. 26, 21 τοῦ ἐνεργείᾳ τελεοῦντος δεῖται νοῦ, και...καταλάμψεως and 26, 29—27, 7, where the idea is fully developed without any fresh voucher from Theophrastus for such an interpretation. In the words (27, 5) μὴ δεῖν οὕτω λαμβάνειν παρακελεύεται, ζητεῖν δε κτέ. it is a mere coincidence that οὕτω should follow δεῖν, and we have here only another adaptation of οὐχ οὕτω ληπτέον. I conclude, then, that there is no evidence to be got from Priscian as to the genuine reading in 429 b 31.

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[illegible] references are to pages.

INDEX OF GREEK WORDS.

The number 400 should be added to each of the page-numbers given. The references will then be to Bekker's pages (402—435), columns (a or b) and lines.

[illegible]

[illegible] μετεβολὴ γίνεται [illegible] κατὰ [illegible] ἡ αἴσθησις [illegible] 18 b 19 [illegible] περὶ τὰ κοινὰ καὶ τὰ [illegible] μάλιστα ἔστιν ἀπατηθῆναι κατὰ τὴν αἴσθησιν 18 b 18, 20, 18 a 15 sq.; [illegible] τῶν αἰσθήσεων ([illegible] sense-organs) [illegible] γίνεται αἴσθησις 17 a 3; αἱ ἄλλαι

[illegible] 25 a 14. [illegible] 31 a [illegible] sense [illegible]

αἰσθητικόν [illegible] 24 a 33, 27 a 14, [illegible] αἰσθητικῶν [illegible] αἰσθητικὸν εἶναι [illegible] 20, 24 a 27 [illegible] τὸ αἰσθητικόν [illegible] 10 b 26 [illegible] 13, [illegible] 31, 13 a 2, 17, 31 [illegible] οὔτε ἄλογον οὔτε [illegible] ἔχον [illegible] 30. [illegible] to νοῦς [illegible] 17; τὸ αἰσθητικὸν οὐκ ἔστιν ἐνεργείᾳ ἀλλὰ δυνάμει μόνον 17 a [illegible] 18 a 11, δυνάμει ἐστὶν οἷον τὸ αἰσθητὸν ἤδη ἐντελεχείᾳ 18 a 3 sq. [illegible] 31 a 4 sq.], τῆς ψυχῆς τὸ αἰσθητικὸν δυνάμει τὸ αἰσθητόν 31 b 26—28; τοῦ αἰσθητικοῦ ἡ πρώτη μεταβολὴ γίνεται ὑπὸ τοῦ γεννῶντος 17 b 16; ἡ τοῦ αἰσθητικοῦ ἐνέργεια ἐν τῷ αἰσθητικῷ 26 a 11. μία ἐστὶν ἡ ἐνέργεια ἡ τοῦ αἰσθητοῦ καὶ ἡ τοῦ

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